

JANUARY—1955

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COMMERCIAL CAR JOURNAL

THE MAGAZINE FOR TRUCK AND BUS FLEET OPERATORS

UNIVERSITY OF MICHIGAN

JAN 17 1955

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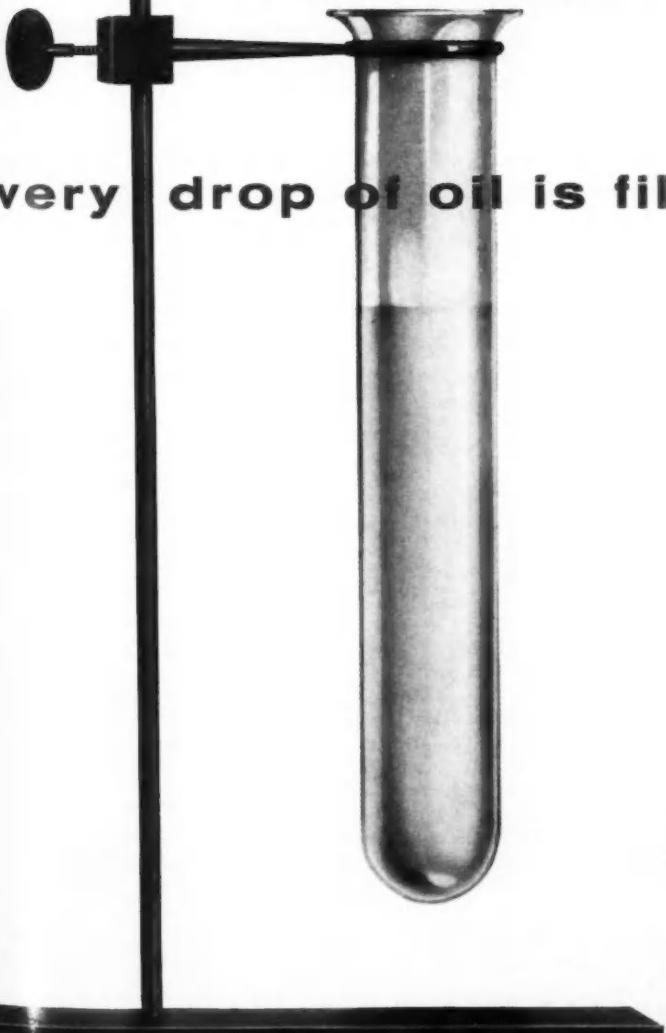
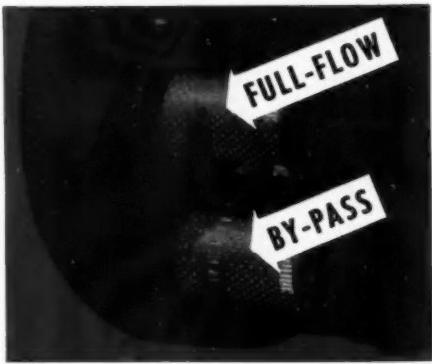
the new, mighty

REO V·8

GOLD COMET

has two oil filters

Every drop of oil is filtered all the time!



Here's the cleanest pressure lubrication in any truck engine . . . another REO "first." Instead of one filter, the new REO V-8 has two, and each supplements the other for a new high in cleaning efficiency.

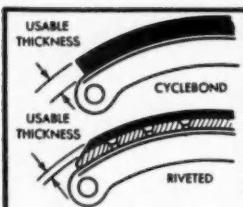
Engines with a single filter merely by-pass a fraction of the oil-flow which is cleaned and returned to the crankcase. In the REO V-8, all oil to the engine also must pass through a full-flow filter, so it gets effective dual treatment.

Never before has so much overall emphasis been put on long-term economy. See this new engine and new REO trucks . . . you'll like them!



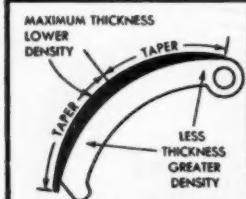
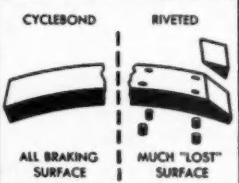
REO MOTORS, INC., Lansing 20, Michigan

Another typical example of Dodge truck's extra-value engineering



More usable thickness.
Dodge truck Cyclebond brake linings can be used virtually through their full thickness. This gives the linings many thousands of miles of added life. Riveted linings should be worn only to rivet heads.

More usable surface.
Every square inch of Cyclebond lining area is braking surface. Riveted linings, because of rivet holes and mitered ends, have up to 10% less braking surface.



Tapered for easy stops.
Cyclebond lining is more tightly compressed at ends, gives a gradual taper. Thick center of lining makes first contact...increased pressure brings the ends into contact. Braking is smooth, even.

Why you go more miles before relining with Dodge truck brakes!

You can be sure of lower brake maintenance, more miles before relining, with Dodge truck brakes and famous Dodge truck Cyclebond linings. And that's in addition to the quick, positive stops, the smooth action, for which Dodge truck brakes are famous.

Long-lasting, reliable brakes are just one example of the extra-value engineering that means more for your money when you buy...more money saved over the life of your truck. Get the facts on how extra-value engineering saves you money; see your dependable Dodge Truck dealer.

DODGE "Job-Rated" **TRUCKS**
A PRODUCT OF CHRYSLER CORPORATION

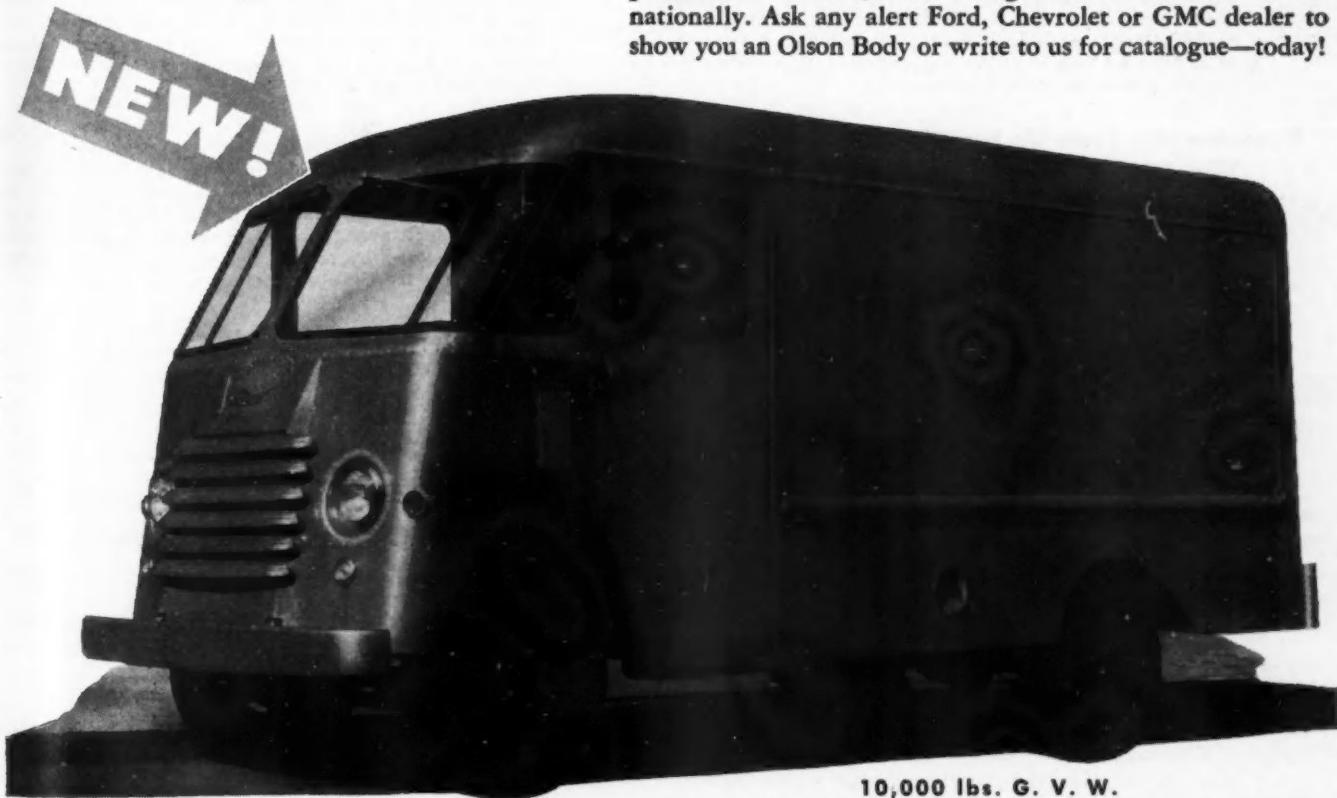
J.B.E.

COMMERCIAL

invest in this economy!

**1½-ton payloads
on 1-ton chassis with
ALUMINUM BODIES**

by *Grumman*



10,000 lbs. G. V. W.

OLSON 12-ft., 440 cubic foot Aluminum Alloy Body on *new*, Modified P-350 Ford Parcel Chassis with 130" W.B., 7200 lb. rear axle, heavier frame and single or *dual* rear wheels, available for Olson Bodies on a *special order*, enabling you to carry

as much on a 1-ton chassis with our body as you now carry on a 1½-ton chassis with a heavy but thin steel body.

Our 12-ft. body is also available on Chevrolet and GMC 1-ton chassis with single or dual rear wheels.



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COMMERCIAL CAR JOURNAL

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THIS MONTH'S FEATURES

Fleet Chief Sparks Team to Safety Honors... 66

M & G Convoy, Inc., Buffalo, N. Y., and its associated firm, Hulbert Forwarding Co., run up a total of 14 million miles a year at an accident rate of .261. This car carriers' success story includes an enthusiastic president, a top safety man and a 300-man driver team with each man fully responsible for his own equipment.

You and SAE 69

Third in CCJ's special series on groups that contribute to better fleet operation, here is the story behind the initials "SAE." While you are already familiar with such standards as SAE threads or SAE oil grades, you will find the Society of Automotive Engineers is concerned with many other important phases of vehicle maintenance.

Dynamometer Tests Up Fuel Mileage..... 73

Winn & Lovett Grocery Co., Jacksonville, Fla., tests each vehicle in its fleet every four weeks on a dynamometer and flow meter. So far, time lost due to road breakdowns has been cut 50 per cent, fuel mileage has been upped .2 mpg. It saves mechanic time too by pinpointing what has to be done.

Parts Salvage Saves \$17,500 Yearly..... 74

Roland Wright, Cincinnati Transit Co. superintendent of equipment, tells how chrome plating, welding, metallizing, redesigning and rebuilding have lengthened parts life for his 362-bus urban transit fleet. For example: While new torque converter impellers would cost \$191.50, here is how Cincinnati salvages them at \$12 each.

Key to Better Brake Drum Life..... 78

Precision work is the answer says O. E. (Johnny) Johnson, vice president of Brake & Electric Sales Corp., Somerville, Mass. It includes selection of the proper drum and lining to meet service requirements, time-tested maintenance practices, use of proper and adequate tools. Result is balanced brakes and longer drum life.

Series 2 Oil Cuts Sludge..... 80

G. A. Fogg, president of Truck Leasing Corp. in Maine, says too frequent overhaul, high oil consumption and poor engine performance plagued trucks leased for stop-start service. Stuck rings, clogged breathers, excessive cylinder wear all caused by cold engine sludge were the reason. Here is how the problem was licked.

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COMMERCIAL CAR JOURNAL

with which is combined Operation & Maintenance

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CAR JOURNAL

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ary, 1955

COMMERCIAL CAR JOURNAL, January, 1955



**There's no such
thing as normal conditions
in the fleet business!**

In places where it *really* gets cold (like at Truckee, Cal. near famous Donner Pass) you'll see plenty of trucks equipped with BLUE STREAK's big Ektron battery cable. Because when a truck's been sitting outdoors at ten below you want the cable that'll deliver all the juice the battery can furnish. Well, the Ektron cable is a full Number One Gauge copper cable with a king-size lug and a heavy terminal for maximum conductivity. This BLUE STREAK cable will last longer than ordinary cables due to its 100% insulation with Ektron—the plastic that absolutely resists damage by acid, gas or oil, and is extremely tough and highly resistant to abrasion. So try BLUE STREAK Ektron cable—it can make the difference between getting started and not. STANDARD MOTOR PRODUCTS, INC., 37-18 Northern Blvd., Long Island City 1, N. Y.

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PIONEER IN HEAVY DUTY IGNITION

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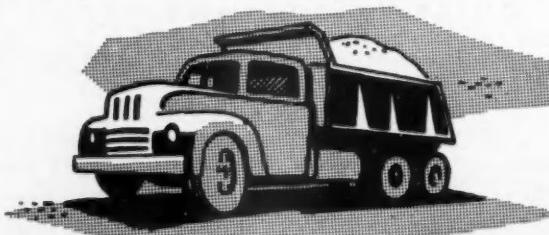
GOULD

KATHANODE



MULTI-POWER BATTERIES

There are no ifs, ands or buts. We can positively cut your bus, truck or diesel battery costs substantially. Your GOULD Jobber will be glad to show you how.



GOULD-NATIONAL BATTERIES, INC.

ST. PAUL 1, MINNESOTA

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OVERLOAD

E D I T O R I A L C O M M E N T

We Can All Sing True Freedom's Song

THE Good Book tells us that first "we see through a glass darkly, but then face to face." Certainly we do not want to appear sacrilegious but at the beginning of each new year that quote takes on a special meaning. Often a look through the rear view mirror brings the road ahead into sharper focus.

This year we got a double take. On one side of the road over which the industry has come, we found positive evidence of past performance; milestones by which to plot its future. Results of these observations are tabulated on page 20 of this issue.

On the other side of the road we found evidence of a strictly sentimental journey. This was so strange a sight for those of us who spend most of our time reporting technical aspects of the passing scene, that it stopped us cold in our tracks.

Perhaps we've become convention happy. During 1954 we made more meetings than ever before. But there was a new, very definite trend. Wherever people gathered . . . just plain working folks like you and us . . . they took time out for a touch on the sentimental side.

At some of the meetings this took the form of an inspirational talk. (There are many preachers on the speaking circuits these days.) At others the punch line came in the form of a president's report. And at still others it was buried deep inside the entertainment . . . as was the case at the ATA convention in New York. We hate to play favorites, but this one particular occasion illustrates the point.

Picture if you will 2200 people crowding the Grand Ballroom of the Waldorf to its uppermost balconies. We were all guests for the evening of GMC Truck & Coach Division. Then

picture Fred Waring, the old maestro, and all of his gang giving out with their best in entertainment. And finally picture all 2200 of those guests singing in unison one of Fred Waring's own songs. It goes like this:

Where in the world but in America . . .
Where oh where but in America . . .
Can you sing true freedom's song?

It doesn't look like much on the printed page. And true enough Fred made a crack to the effect that if the truckers wouldn't sing it the way it was written, by gad they could sing it the way they wanted to.

But despite the festivities and despite the unpracticed vocal chords we noted quite a few watery eyes as we looked about. A few Adam's apples moved up and down. And right then we decided that there was our new year's message to the industry we serve.

For where but in America (and thank God that includes our neighbors to the north and south) can we sing true freedom's song? And as long as we have that right, the rest is easy. With freedom in 1955:

- ★ We can go right on fighting for the things we believe to be right.
- ★ We can work at making America prosperous —for as industry goes, so goes highway transportation.
- ★ We can pull all the stops for better public understanding of our own industry.
- ★ We can do all the specifics we meant to do in years gone by, but never quite got around to.
- ★ We can make 1955 our own Happiest New Year yet!

Bart Rawson
Editor

MARFAK CUSHIONS WINTER'S BLOWS



TUNE IN...TEXACO
STAR THEATER
starring
DONALD O'CONNOR
or JIMMY DURANTE
on TV Saturday nights.
METROPOLITAN OPERA
radio broadcasts
Saturday afternoons.



TEXACO

ccj



At Your Service

TIMELY NOTES ON MAINTENANCE AND OPERATION

by MURRAY SIMKINS Managing Editor

More Mileage from Spark Plugs

FRED ROHLEDER, shop superintendent of John J. Casale, Inc., of New York City, says that the secret in obtaining best plug performance is to select heat ranges according to engine condition and type of service. Mechanics in this fleet are trained to identify oil fouling, for example, and will requisition a hotter plug to temporarily relieve this condition. At the same time, they know that fouling often indicates trouble elsewhere in the engine, and the rest of their tune-up will be guided accordingly.

Mechanics clean and regap plugs three to four times, discarding them only "on condition." Plugs are sparked under air pressure in a standard tester if there is any question as to their further usefulness. Generally, plugs are replaced when their ground electrodes are worn to about one-third original thickness or it is found impossible to thoroughly remove combustion deposits. In spite of a high hourly labor rate, Mr. G. F. Arthur, fleet supervisor, points out that this operation reduces overall spark plug costs by some 20 per cent. Here, however, careful maintenance of servicing equipment, personnel training and close supervision by the shop foremen have eliminated difficulties arising from improper cleaning or regapping.

Regardless of mileage, plugs are "pulled" twice a month on intercity units. All other vehicles have spark plugs serviced on a monthly basis. Plug changes are handled by the night crews and, as a general rule, cylinder compression checks are made at the same time. Drilled 2 x 4-in. blocks stamped with cylinder numbers are used to hold the plugs in order when they are removed, and this simple device helps the mechanic isolate any abnormal engine condition.

Unless the spark plugs are obviously worn out, it is standard practice to degrease and dry them thoroughly before abrasive cleaning. Prior to using solvent, mechanics would often sand-blast oily plugs, only to find that abrasive packed

heavily inside the firing bores. Before the plugs are regapped, they are placed in a vice and the electrodes are dressed with a point file. A gap setting of .028-.030-in. is used for all engines.

According to George M. Galster, service manager of Champion Spark Plug Co., these procedures have virtually eliminated spark plug trouble in the Casale fleet.

A New Look at Knocking

NEW insight into the combustion phenomena that cause gasoline to knock is obtained by equipment which instantaneously photographs these phenomena as they occur inside an automobile engine. A report on the results obtained with this research test method was presented before a national meeting of the Society of Automotive Engineers by George A. Ball of the research and engineering department of Ethyl Corp.

The special test equipment, Mr. Ball explained, photographs flame developments during combustion and simultaneously measures pressures inside the cylinder during each instant of engine operation. The resulting photographs, he said, confirm the well-known fact that knock occurs immediately after a portion of fuel—still un-reached by the flames spreading out from the spark plug—spontaneously ignites and begins to burn very rapidly. Cylinder pressure then rises so fast that acoustic resonance develops in the combustion gases and is heard as knock.

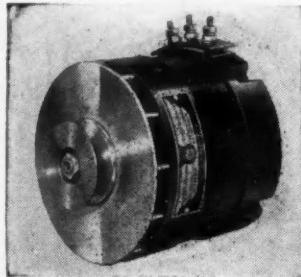
While the knock-producing reaction is very fast, it does not appear to produce a true detonation wave, at least under the conditions so far investigated, Mr. Ball said. The camera, while it can be operated at speeds up to 7200 frames per second, is still too slow to record the supersonic disturbances that would be caused by detonation of the remaining unburned fuel. However, the pressure records show no abrupt break in pressure rise such as would indicate a super-

(TURN TO NEXT PAGE, PLEASE)

Plain talk about maintenance expenses, operating costs and Leece-Neville Alternators

It takes a few words to explain why so many fleet operators are convinced that L-N Alternators save money, but if you are concerned with reducing costs, it could pay you to read the rest of this story.

As you may know, the Alternator is an a.c. generator that replaces the d.c. generator. A simple dry-plate rectifier converts the a.c. to d.c.



L-N ALTERNATOR
(A.C. Generator)

Because the Alternator has *no commutator*, you have no commutator troubles, no expenses for armatures. Think what that saves you! A complete overhaul of an L-N Alternator involves just replacing six small wearing parts, costing only a few dollars.

NO RUNDOWN BATTERIES

L-N Alternators generate a charging current of 18 to 40 amperes with engine idling. That's important if your fleet has much idling time, short trips, slow driving. Or your fleet may need extra current for lights, heaters, fans, radios, etc. L-N Alternators handle this load with capacities of 50 to 95 amps. for 6-volt systems; up to 180 amps. for 12-volt.

In both cases, L-N Alternators keep batteries up, keep vehicles rolling, reduce costs for idle time, service trucks, battery charging and replacement.

ACCURATE VOLTAGE SAVES YOU MONEY

The rugged L-N Regulator holds voltage within 2/10 volt of setting, protects all electrical parts. One fleet claims that savings on sealed beam lamps paid for their Alternators!

RELIABILITY UNMATCHED

Fleet records show the major cause of downtime is electrical failures . . . almost unheard of with the rugged, heavy-duty Leece-Neville Alternator System, proved by performance since 1946.

That in brief is how L-N Alternators can cut costs on your fleet. For all the facts write The Leece-Neville Company, Cleveland 14, Ohio. *Distributors in principal cities . . . service stations everywhere.*

YOU CAN
RELY ON

Leece-
Neville
ALTERNATORS



At Your Service

Continued from Page 9

sonic combustion wave followed by a shock wave.

Studies of the "cool" flame caused by precombustion reactions in hot, highly compressed fuel also have been made with the equipment, Mr. Ball reported. When the L-head test engine was operated without spark ignition, the cool flame started at the valve end, swept across the combustion chamber, and ended at the far side over the piston. It was followed by a "hot" flame which correlated with a much greater pressure rise and with pressure fluctuations audible as knock. Both the cool and the hot flames traveled about four times as fast as normal spark-ignited flame.

White Forms Aid Training

IN THE interests of raising safety and driving standards of the truck industry, The White Motor Co. has developed a series of forms to aid fleet owners in the selection and training of drivers. Designed to increase truck safety on the highway and reduce maintenance cost, the driver materials offer both preventive and curative "medicine." Not only do the forms allow truck operators to weed out undesirable or poor risk applicants, but also point out weak spots where further training would benefit existing members of the organization.

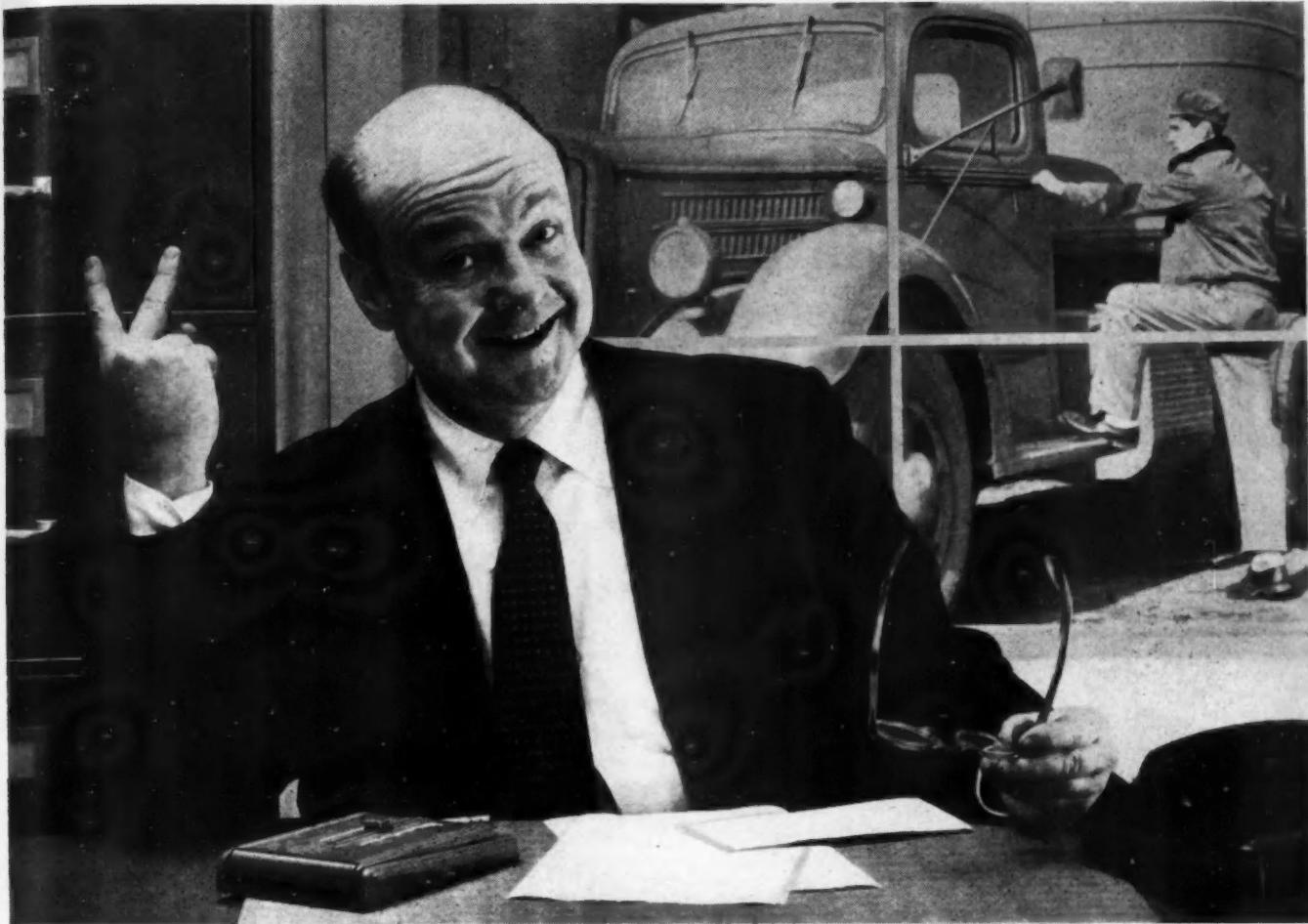
Included in the nine available forms are: applications for city delivery, over-the-road and long distance drivers, a telephone check form for reference with previous employers, a driver interview check list that systematically gathers pertinent information needed for proper applicant evaluation, a traffic and driving knowledge test which judges the driver's knowledge of various operating conditions and maintenance standards, a traffic road test check list to measure the driver's ability while actually driving on the highway and a physical examination sheet for a physician to fill out, should the applicant be hired.

Diesel Engine Water Filter

DETROIT Diesel Engine Division of General Motors has announced the availability of a new engine water filter as an optional accessory on Series "51," "71" and 6-110 Diesel engines. Through the use of mechanical filtration, in-

(TURN TO PAGE 12, PLEASE)

B EFO
long, to
driver's
That's
AIRFOA
new eq
that A
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the job
It sure
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I won two jack pots—just by being a Good Joe!

BEFORE I had my own fleet, I pushed many a big rig over long, tough hauls. So I know the driver's seat can get mighty hard!

That's why I specified full-depth AIRFOAM seating in the cabs of all new equipment. It's no accident that AIRFOAM has taken over in passenger cars — so it should ease the job for truck drivers, too!

It sure did—and my drivers quickly responded with so much added zip and comeback that they're driving rings around the competition!

That was my first jack pot.

And now, I find I've won another: With 150,000 miles and more rolled up by that equipment, not ONE of those full-depth AIRFOAM cushioned seats has needed a dime's worth of repairs or replacements!*

So I've won both ways by being a Good Joe. That's better than par on any course!

*From actual fleet records. For more, by the men who buy and drive, contact Goodyear, Automotive Products Dept., Akron 16, Ohio.

AIRFOAM contains over half a MILLION air cells to each cubic inch—and they interconnect! That's why AIRFOAM cushioned seats "breathe" with every motion—stay cool and fresh and buoyantly comfortable for the life of the truck!



Airfoam—T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

Airfoam MADE
ONLY
BY **GOOD YEAR**
THE WORLD'S FINEST CUSHIONING

We think you'll like "THE GREATEST STORY EVER TOLD"—every Sunday—ABC Radio Network—THE GOODYEAR TELEVISION PLAYHOUSE—every other Sunday—NBC TV Network

**more miles
per dollar!**



Bendix

ELECTRIC FUEL PUMP

for trucks, buses and passenger cars

**Learn more about this new and improved fuel pump.
Write for descriptive folder and specifications.**

WRITE DEPARTMENT B

***REG. U. S. PAT. OFF.**

ECLIPSE MACHINE DIVISION



Bendix® Electric Fuel Pump



Bendix® Folo-Thru Starter Drive



Stromberg® Carburetor



At Your Service

Continued from Page 10

Inhibitors and resistor plates the filter removes impurities from the cooling system, softens the cooling water and controls alkalinity, rust formation and electro-chemical action.

The unit contains a replaceable filter element which is to be renewed at regular intervals depending upon the chemical composition of the cooling water. In the event the element becomes clogged, water by-passes the filter and no filtering action takes place until the element is replaced. The filters are easily installed and range from $3\frac{1}{2}$ in. to 5 in. in diameter and from 6 in. to $7\frac{1}{2}$ in. in height.

New Method of Bonding Fiberglass

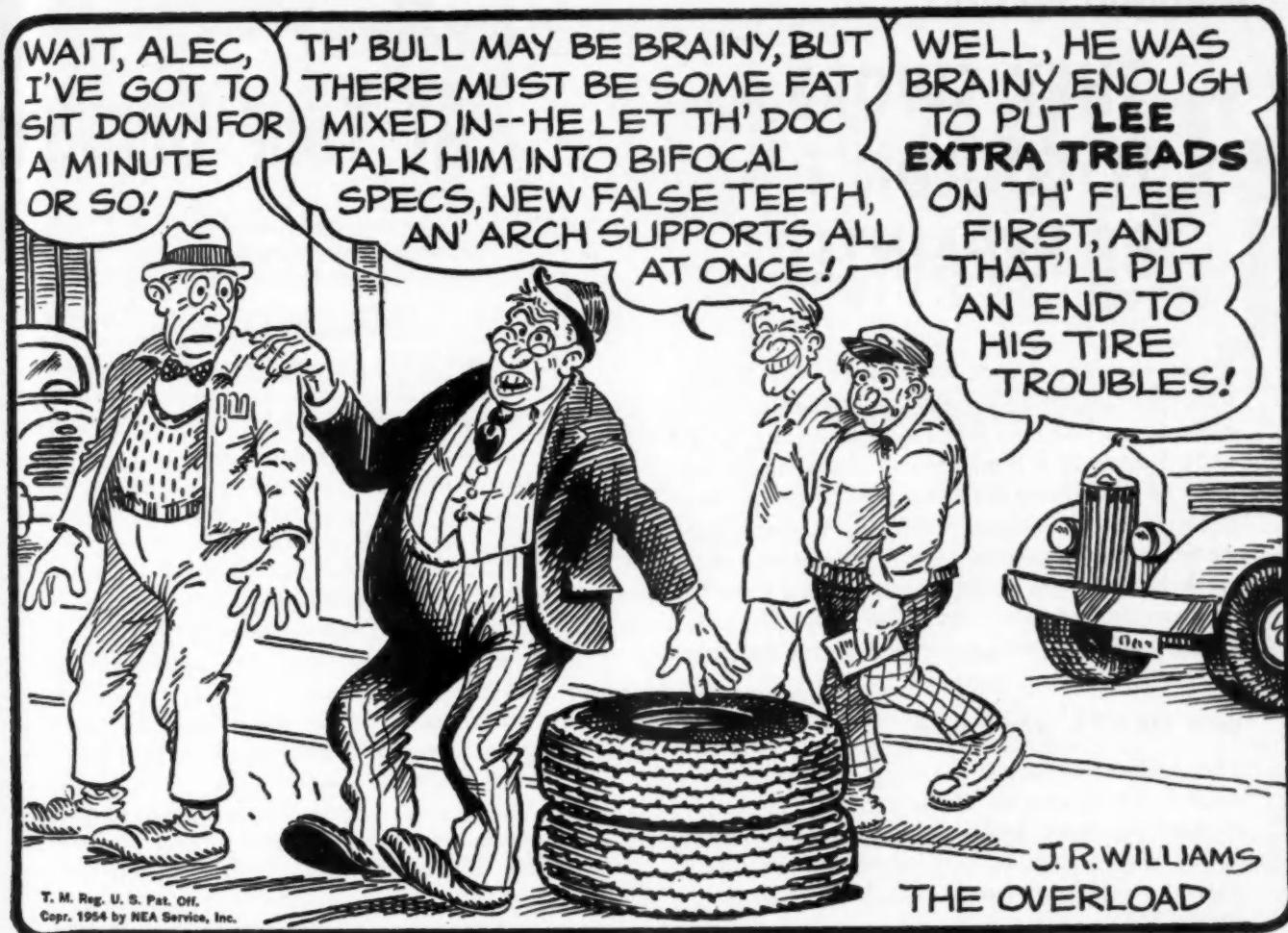
THE BUREAU of Ordnance has announced the development of a new structural material for bonding fiberglass, which will produce laminates and tubular products of superior strength. Instead of the conventional method of bonding fiberglass with resins and organic materials, the new method combines metals and inorganic substances, or combinations of both. Fiberglass filaments are formed in the usual way by the use of appropriate refractory furnaces and bushings. As the filaments emerge from the furnace at high speeds, they are individually coated with metallic and other inorganic substances. Metal coatings, such as iron, nickel, molybdenum, aluminum, zinc, lead, tin, and copper have been applied. The coated fibers are then bonded and compacted to form tubular products and laminates in a subsequent stage of the process which involves the application of suitable conditions of heat and pressure with or without the use of the more common flux materials. The new process, on the basis of work accomplished to date indicates that the following important advantages may be obtained: (1) A fiberglass reinforced structural material which is suitable for higher temperatures than presently available fiberglass structural materials. (2) Improved strength-weight ratio. (3) High resistance to usual corrosion agents. (4) Raw materials available in this country. When available, the new material should have important commercial application. The Bureau of Ordnance is seeking industrial participation in the further development of the new material and in the determination of its uses.

(TURN TO PAGE 14, PLEASE)

COMMERCIAL CAR JOURNAL, January, 1955

OUT OUR WAY

BY J. R. WILLIAMS



UP TO 50% MORE ORIGINAL MILEAGE with Lee Super DeLuxe Extra Tread 5-Ribs

It's a fact—by actual test, the Lee Super DeLuxe Extra Tread 5-Rib gives you up to 50% more original mileage than a 100-level highway tire. Yet it costs only about 12½% more!

These tires are suitable for any wheel position, either truck or trailer. They're built with 29 extra Lee features that contribute to long wear, cool running, safety and increased recappability. And the service they'll give will show up as mighty pleasant reading in *your* mileage reports!

Available with All-Nylon or Rayon Cord

FREE!

8½" x 11" J. R. Williams
color-cartoon shop posters
... promoting correct
truck-tire maintenance.
You'll get a new one every
month ... order as many
copies as you need.



LEE
TIRES

2-A

Lee Rubber & Tire Corporation
Conshohocken, Pa.

Please send me each month for six months...copies of the current
J. R. Williams tire-maintenance poster. Send also catalog information
(type of service)

Company _____

My name _____

Street _____

City _____ Zone _____ State _____

Please attach coupon to your company letterhead.

LEE RUBBER & TIRE CORPORATION • CONSHOHOCKEN, PA.

**Tank truck body
ravaged by fire!**

THEY SWORE IT COULDN'T BE REPAINTED

When the fire-ravaged tank truck was hauled into the shop, company officials marked it off as a total loss. Not only was the paint on the metal body burned to a hard carbon, but a tenacious crust of fire-fighting foam had left a concrete-like deposit on the surface, and rust showed where water had done its damage. To resalvage this truck, these tough accumulations would have to be entirely removed from the metal chassis. Company officials were convinced that it couldn't be done...

then OAKITE was called...

The Oakite Technical Service Representative made a careful analysis of the various deposits to be removed. Realizing that no *one* material would do a complete job, he decided to use *three* specialized Oakite compounds, each designed to do a specific job.

First, using the Oakite Hot-Spray Unit, he applied Oakite Composition No. 57 to remove the residue exterior paint. Then, Oakite Stripper R6 was applied to strip off the grey and red prime coats. Finally, surface treatment using Oakite Compound No. 33 completed the operation by dissolving the rust and encrusted fire-fighting foam. Results—a perfect stripping job, leaving the completely resalvaged truck body in ideal condition to receive new paint—just one more example of how Oakite know-how can produce money saving results even when faced with the toughest of cleaning problems.

* * *

For many other valuable automotive cleaning tips, send for your FREE copy of Booklet F-4401. Write Oakite Products, Inc., 26D Rector Street, New York 6, N. Y.



Technical Service Representatives in Principal Cities of U. S. and Canada



J At Your Service

Continued from Page 12

How to Stop a Truck

HOW FAST is it safe to drive on ice or snow? Considering only the road surface itself, the National Safety Council offers this advice:

To provide the same stopping ability available on dry pavement at 50 mph: Speed on ice must not be higher than 25 mph with reinforced tire chains or 15 mph with special winter tires. Speed on packed snow must not be higher than 35 mph with reinforced tire chains or 28 mph with special winter tires.

Reinforced tire chains cut braking distances in half on both snow and ice, the report states. Starting traction is increased seven times on ice and nearly four times on packed snow, as compared with regular tires.

Reinforced tire chains, which have projecting teeth or cleats on each cross chain, "are very effective on glare ice in reducing braking distances, opposing side skids and increasing forward traction" as compared with regular round wire link chains which provide good stop-and-go traction on snow but comparatively poor resistance to side skids, the report states.

Some special winter tires, according to the report, "serve a real purpose under certain weather and road conditions, particularly when snow or slush is soft and not too deep. However, the overall improvement of even the best tires tested is not great enough to warrant less care or precaution when driving on slippery surfaces . . ."

Twin Coach Offers Test Buses

AVAILABILITY of several Fageol-Leyland diesel-powered buses for field demonstrations is announced by Twin Coach Company, Kent, Ohio. According to Twin Coach officials, these buses are veterans of many years' service and have recently been converted from their previous gasoline or diesel engines to Fageol-Leylands. The converted buses will be made available for the use of any transit companies which desire to check performance and economy of the Fageol-Leyland diesel conversion engine in regular service on their own properties. To arrange for a demonstration, contact Diesel Engine Conversion Division, Twin Coach Company, Kent, Ohio.



UP FRONT WITH CCJ

JANUARY, 1955, FLEET HIGHLIGHTS AS REPORTED BY COMMERCIAL CAR JOURNAL

MR. EXECUTIVE

watch for administration-backed legislation stemming from the report of the Cabinet Committee on Transport Policy and Organization. It was turned over to President Eisenhower middle of last month, but its details were not made public. Items under consideration include: (1) transfer of some ICC functions to a Secretary of Transportation in the Cabinet, (2) retention of Section 22 rates, (3) repeal of the 3 per cent tax on freight and the 10 per cent tax on passenger transport, (4) greater flexibility in rate making, and (5) a stronger Bureau of Motor Carriers.

UNITED FRONT

for the trucking industry has been the theme of Neil J. Curry's speeches since his election as American Trucking Associations' president in October. Last month he asked ATA's executive committee to pass a resolution denying recognition to "splinter" groups professing to speak for the trucking industry. He said the activities of such groups have been accompanied by confusion both within and without the industry that tends to weaken the effectiveness of ATA and its affiliated state associations.

S-D DAY

reports from various states indicate that trucks did more than their share to cut the accident rate. While actual totals will not be known for some time yet, the estimated national traffic toll for all vehicles on Dec. 15, 1954, ranged from 48 to 51 deaths, 1680 to 1785 injuries (some of which could add to the final death toll), 10,800 to 12,475 accidents. In 1953 there was an average of 27,000 traffic accidents a day, and, for the first 10 months of 1954, traffic deaths averaged 97 a day.

TOLL ROAD

expansion is being sidetracked in some states at present. Possible reasons are (1) too many turnpike bond issues on the market, (2) a "wait-and-see" attitude among the states as to whether federal-aid will be granted for such highways.

In Oklahoma, financing was assured last month for a toll highway from Tulsa to near Joplin, Mo. Bonds for two others (one from Oklahoma City to near Wichita Falls, Texas, and one from Oklahoma City to the Kansas border) were turned down by investment bankers. Early this month, Illinois expected to sell bonds to finance 191 miles of toll highway, including a belt line around Chicago connecting Ind. and Wis., a road from Chicago to Rockford and one from Chicago to Aurora. Plans for another 274 miles (a highway connecting Chicago, Rock Island and Moline and another cutting across the state between Terre Haute, Ind., and St. Louis, Mo.) are postponed for lack of potential traffic.

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DETROIT DISPATCH

SYNTHETIC RUBBER WITH same physical properties and molecular structure as natural rubber has been announced by Goodrich-Gulf Chemicals, Inc. While at present it is considerably more costly and cannot be produced in present synthetic plants from present raw materials, it could serve as a check on excessive natural rubber prices.

HIGH HORSEPOWER ENGINES AND increased rpm have caused a truck design problem. One company is getting ready to beef-up drive shaft components—heavier yokes, drive shaft tubes of greater diameter and with heavier walls—to counteract higher torque.

MORE V-8 ENGINES ARE coming. One maker is readying a series of four,

overhead valve V-8's, another has a larger displacement model slated to join its present V-8 line. Continental's new V-8 is available in both gasoline and diesel models (see page 90, this issue).

"SELF-CONTAINED" AIR BRAKE MADE by Eaton will be adopted by several truck makers starting this month with Ford. Mounted as a single unit on the brake spider, it features a single anchor pin and free turning roller pins that require no lubrication (Sept. '54, page 156).

IMPROVED WIRING FOR trucks may be coming. Operators, through ATA, have suggested several changes such as use of conduit, better shielding against corrosion, improved battery grounds, relocation for less interference.

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WASHINGTON RUNAROUND

A STATE CANNOT suspend the interstate operating authority of an ICC motor carrier said the U. S. Supreme Court last month in the case of Latham Castle v. Hayes Freight Lines (Oct. '54, page 19). The court, however, pointed out that there is an ICC regulation requiring interstate operators to comply with state laws, and that the ICC can revoke operating rights for violation of ICC regulations. Said the court: "If, therefore, motor carriers persistently and repeatedly violate the laws of a state, we know of no reason why the Commission may not protect the state's interest, either on the Commission's own initiative or on complaint of the state."

PRIVATE CARRIERS HAVE asked ICC to crack down on "buy and sell" motor carriers. ATA's Private Carrier Conference has passed on to the ICC a resolution asking that the ICC "... enforce its own regulations and eliminate said 'buy and sell' operations under the guise of private carriage . . ."

"WHALE-BACK" FOR trailers between New York City and Norfolk, Va., by Sea Trailers, Inc., is being considered

by the ICC. Sea Trailers would operate two ships, offer one trip a day each way, for motor common carriers. At press time, ICC had not yet ruled on McLean's earlier proposed trailership service (Dec. '54, page 18).

WEIGHT-DISTANCE TAXES WILL be under fire when Congress gets down to business. ATA and the Mid-West Conference on Truck Reciprocity are seeking to stop Ohio and New York from collecting such taxes on out-of-state trucks, are urging that federal highway aid be denied states levying such taxes. National Automobile Transporters Assn. also is expected to launch a drive to remove third structure taxes.

RECIPROCITY AND all of its aspects affecting commercial vehicle operation will be investigated by American Assn. of Motor Vehicle Administrators. AAMVA, at its meeting last month in Los Angeles, Cal., voted to undertake "... an exhaustive and complete research study . . ." of the problem.

EXCISE TAXES AND corporation income taxes will probably continue at

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BUSINESS TRENDS

Third Quarter Truck Tonnage*

Region	Third Quarter 1954	Third Quarter 1953	Per Cent Change
New England.....	3,161	3,133	+ 0.9
Middle Atlantic.....	11,240	12,142	- 7.4
Central.....	16,360	19,407	- 15.7
Southern.....	6,192	6,116	+ 1.2
Northwestern.....	3,131	3,093	+ 1.3
Middlewestern.....	3,417	3,372	+ 1.3
Southwestern.....	4,620	4,496	+ 2.8
Rocky Mountain.....	2,184	2,188	- 0.2
Pacific.....	7,738	7,846	- 1.4
United States.....	58,062	61,793	- 6.0

* In thousands of tons. Reported by ATA Research Dept.

While 3rd quarter ICC Class I motor carrier tonnage was down 6 per cent as compared to a year ago, it ranked as second highest 3rd quarter on record. Early reports show an upward trend in 4th quarter.

ence with other components. Truck makers are considering them.

TIRE MEN MAY be asked by truck makers to increase capacity of 10:00 x 20, 12 ply tires to 5000 lb from the present 4000 lb rating. It would permit more weight on front axle.

JOUNCE AND BOUNCE IN tractor-trailer combinations has led AMA and TTMA to ask the Society of Automotive Engineers to study spring deflection frequency in loaded and empty vehicles. They want to know the effect on driver, cargo and component parts.

CCJ'S TRUCK SPECIFICATIONS, beginning on page 105, this issue, have been condensed for quicker reference, will appear four times a year—Jan., Apr., July, Oct.

their present levels, not be reduced April 1 as provided in the present tax law. Reason is: General dip in business activity resulted in lower tax revenues.

RILL be down Mid-West city are New York out-of federal levying the Trans- to launch structure

RIS AND Co., Kansas City, Mo., is being sued for \$100 million by a group of 23 railroads. They charge the motor carrier with illegal operations and unfair competition. They claim such activity has diverted freight that would be otherwise carried by the rails. Riss said the charges were "Completely false." Riss is presently suing 85 railroads (Oct. '54, page 18).

ROCK ISLAND RAILROAD'S motor carrier subsidiary has been granted interstate trucking authority for certain points in Ill., Iowa, and Neb., providing service not auxiliary or supplemental to the railroad's train service. ICC said the exception to policy was needed because of public need for the service.

CAPACITY OF the nation's tank truck fleet is being studied by the National Petroleum Council. U. S. Dept. of Interior asked that the study be made.

IN THIS ISSUE . . .

SAFETY M & G Convoy and its associated firm, Hulbert Forwarding, have a 300-man driver team with an accident frequency of .26. Here are the details of how it is done when the "Fleet Chief Sparks Team to Top Safety Honors" . . . page 66.

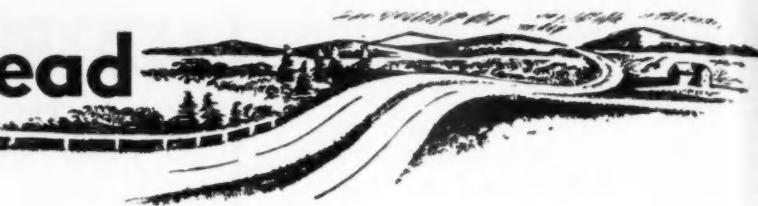
SOCIETY OF AUTOMOTIVE ENGINEERS Third in CCJ's series about associations that promote fleet efficiency, this one tells about SAE and its interest in better truck design and maintenance, shows how "You and SAE" can work together for better operation . . . page 69.

CUT COSTS Through chrome plating, metallizing or reworking, "Parts Salvage Saves Cincinnati \$17,500 Yearly." It has also upped parts life for this 362 transit bus fleet . . . page 74. Lost revenue from equipment painting layups, short trailer life, high annual painting charges cost Chemical Tank Lines money until they discovered that "Neoprene Cuts Acid-Tank Painting Costs by 85%" . . . page 82.

V-8 ENGINE With a 240-hp gasoline model and a 182-hp diesel model, "Continental Offers V-8 Line in Gas and Diesel" . . . page 90.

JANUARY NEWS ROUNDUP It includes previews of the annual meetings of SAE (its 50th anniversary get-together), the Private Truck Council of America and the Truck-Trailer Manufacturers Assn. . . . page 164.

The Road Ahead



IN 1955, private and for-hire truck hauls should increase. This year's production of goods and services—Gross National Product—is estimated to reach between \$360 and \$365 billion, as compared to about \$356 billion last year. Fleet operators in all categories can expect their share of this increase. Common carrier business volume may go 5 per cent above 1954.

POPULATION INCREASE OF about 3.5 per cent means more retail sales. Food distribution, with its increasing emphasis on frozen and other partially processed products, will be tonnage to watch. New construction, estimated to be \$2.5 billion better than last year, will provide business for most all types of fleets. Home building may reach 1.4 million units this year, will be at least as good as 1954.

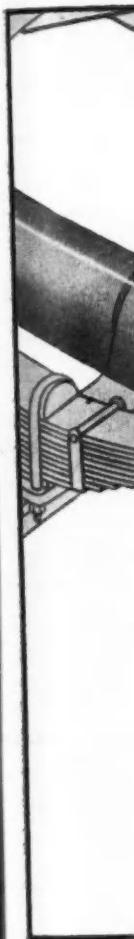
INDUSTRIAL PRODUCTION IS expected to remain high, about 125 to 130 per cent of the Federal Reserve Board's 1947-49 average. Steel production, according to the recognized authority of the industry, "The Iron Age," will reach 106 million tons this year as compared to 87 million in 1954. Highway construction, boasted by President Eisenhower's road building proposals, could go as high as \$10 billion, will certainly be more than last year's \$6 billion.

CHEMICAL COMPANIES HAVE been increasing in the post-war world, completed \$1 billion of new construction last year, have long range plans for almost \$5 billion more. Shipments from these companies should continue to increase in tonnage. With increasing emphasis on "trade, not aid," import tonnage should be up to more closely match export trade.

DEFENSE FREIGHT will not remain the same high percentage of traffic volume that it has in recent years, but it will continue as an important source of motor freight tonnage. There will not be cuts in combat troops. Cuts in service and supply units will be more than offset by increased purchase of new and specialized equipment—all of which need to be transported.

PIGGY-BACK HAS undergone a year of expansion. First of this year there were 22 railroads providing the service—18 doing it for themselves only, two hauling highway common carrier trailers only, and two providing service for themselves and for highway common carriers. A year ago, there were only nine railroads with TOFC service—six hauling their own trailers, two hauling highway common carrier trailers, and one providing both types of service. With railroads gathering more experience and cost data, there could be an increase in the number of rail carriers offering service for highway common carriers (Dec., page 18). Two predictions: (1) Coast-to-coast "piggy-back" before year's end as more and more railroads complete interchange agreements. (2) Only very small increase in "captive piggy-back" tonnage.

TRUCK AND BUS REGISTRATIONS the first of this year were estimated at 9.6 million as compared to 9.3 million at the beginning of 1954, a net increase of over a quarter million vehicles. This is good news for tire and replacement parts suppliers. Truck and bus factory sales are estimated to be over a million units for the eighth consecutive year.



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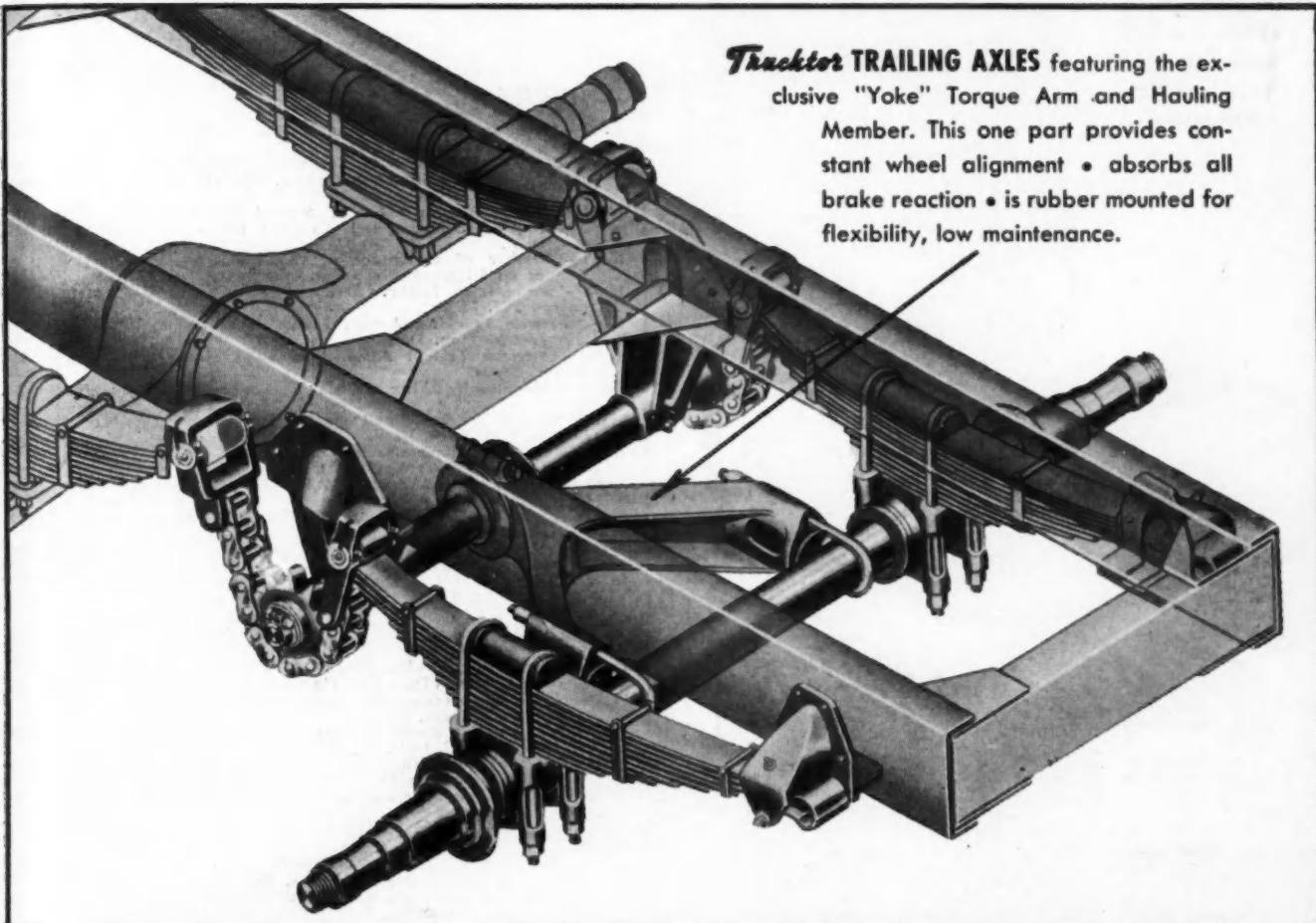
FOR GREATEST PROFITS

over-the-road



GMC Model 450 with Trucktor Model HLS Trailing Axle, 9.00 x 20 tires, hydraulic brakes.

Trucktor TRAILING AXLES featuring the exclusive "Yoke" Torque Arm and Hauling Member. This one part provides constant wheel alignment • absorbs all brake reaction • is rubber mounted for flexibility, low maintenance.



FOR HIGHEST PAYLOADS, LOWEST COST over-the-road, pick *Trucktor* 6-wheel trucks and tractors over dual drives. You will carry more payload, because *Trucktor* units are lighter. Your trucks will make better time, because *Trucktor* units are *simpler*—there's less frictional power loss. You get more miles per gallon. And your trucks

will require fewer overhauls—spend more time in profitable operation—cost less to maintain.

Trucktor Trailing Axles are available for most truck makes and models, new or in use. For details, call your Truck Dealer, *Trucktor* Distributor, or write direct, giving make and model of truck, tire size, and type of wheels and brakes. The *Trucktor* Corporation, Route 22, Mountainside, N.J.

Detachable Chain-and-Sprocket 4-WHEEL DRIVE



Makes tire chains unnecessary. When extra traction is needed, sprocket chains are slipped over sprockets and pinned. Attached and detached quickly, simply, without removing wheels (in picture, wheel removed to show construction).

Trucktor® TRAILING AXLES

Trailing Axles for 6-Wheel Conversions • Single and Tandem-Axle Trailer Assemblies with Steel Springs or General Air Springs

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With or Without
Fore and Aft
Adjustment



Relaxed Ride FULL CUSHION SEAT

Milisco offers you today's finest in truck-seat engineering . . . the "Monarch" . . . with balanced body support and full cushion contour back rest. Improved suspension of cushioning materials provides a relaxed ride . . . maximum comfort with 2-way buoyancy to absorb road shocks. Strong tubular steel frame for heavy duty service; with or without fore and aft adjustment. Add the plus-value of a Milisco "Monarch" to your truck for enduring customer satisfaction. Our engineering department will gladly cooperate with you.

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DATES and DOINGS

JANUARY

- 10-13—American Road Builders Assn., Annual Meeting, Roosevelt Hotel, New Orleans, La.
 10-14—Society of Automotive Engineers, Golden Anniversary Annual Meeting and Engineering Display, Sheraton-Cadillac and Statler Hotels, Detroit, Mich.
 11-14—Highway Research Board, Annual Meeting, Bldg. of National Academy of Sciences and National Research Council, Washington, D. C.
 13-14—Chamber of Commerce of the United States, National Conference on Highway Financing, Washington, D. C.
 13-15—New Mexico Motor Carrier Assn., Annual Convention, Albuquerque, N. M.
 18—American Trucking Assns., Finance and Administrative Committee, Washington, D. C.
 18-20—American Transit Assn., Region VI Meeting, Hotel Adolphus, Dallas, Texas.
 19-20—American Trucking Assns., Executive Committee, Washington, D. C.
 20-21—Private Truck Council of America, Annual Convention, Hotel Statler, New York, N. Y.
 24-28—Regular Common Carrier Conference, American Trucking Assns., Board of Governors Meeting, Columbus Hotel, Miami, Fla.
 24-28—University of Alabama, Motor Fleet Supervisors Course, University, Ala.
 25-27—American Transit Assn., Region IV Meeting, Hotel Patten, Chattanooga, Tenn.
 27-29—Truck-Trailer Manufacturers Assn., Annual Convention, Boca Raton Hotel, Boca Raton, Fla.
 31-Feb. 2—National Automobile Dealers Assn., Annual Convention and Truck Body Exhibit, Chicago, Ill.

FEBRUARY

- 1-June—University of Houston, Motor Vehicle Supervision Course, Houston, Texas. (Tues. and Thurs. nights during Spring Semester.)
 7-11—Automotive Accessories Manufacturers of America, Exposition, Navy Pier, Chicago, Ill.
 15-18—National Car Rental System, Annual Meeting, Netherland-Plaza Hotel, Cincinnati, Ohio.
 16-May 11—Syracuse University, Fleet Supervisor Course, Syracuse, N. Y. (Wednesday nights.)
 24-27—Pacific Automotive Show, Pan Pacific Auditorium, Los Angeles, Cal.

MARCH

- 1-3—Society of Automotive Engineers, Golden Anniversary Passenger Car, Body & Materials Meeting, Sheraton-Cadillac Hotel, Detroit, Mich.
 1-4—American Transit Assn., Region V Meeting, Hotel President, Kansas City, Mo.
 22-24—American Transit Assn., Region III Meeting, Dayton Biltmore Hotel, Dayton, Ohio.
 22-25—Movers & Warehousemen's Assn. of America, Annual Convention, Statler Hotel, Los Angeles, Cal.
 28-30—Common Carrier Irregular Route Conference, Hollywood, Fla.
 31-Apr. 3—Southwest Automotive Show, Bexar County Coliseum, San Antonio, Texas.

APRIL

- 14-16—Maryland Motor Truck Assn., Annual Convention, Lord Baltimore Hotel, Baltimore, Md.
 18-19—Ohio Motor Bus Assn., Deschler-Hilton Hotel, Columbus, Ohio.
 18-22—University of Florida, Fleet Training Course, Gainesville, Fla. (Tentative.)
 20-22—American Transit Assn., Region VI Meeting, Empress Hotel, Victoria, British Columbia.
 28-30—Southeast Automotive Show, Exhibit Bldg., Atlanta, Ga.

MAY

- 8-11—Automotive Engine Rebuilders Assn., Annual Convention, Hotel Cleveland, Cleveland, Ohio.
 9-12—Equipment and Maintenance Council and Council of Safety Supervisors, American Trucking Assns., Spring Meeting, Hotel Leamington, Minneapolis, Minn.
 15-20—National Tank Truck Conference, American Trucking Assns., Annual Convention, San Francisco, Cal.
 15-22—National Accounting and Finance Council, American Trucking Assns., Seattle, Wash.
 19-22—Tri-State Automotive Exhibit, Kingsbury Armory, New York, N. Y.

it's a PAY CHECK stepper-upper!

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MECHANICS STANDARD SERVICE SET

Every minute you lose hunting for the right tool... each time you're compelled to "make-do" with a misfit... whittles away at your earning power! Here's a set that backs up your own skill and know-how with the fastest, finest tools a man can own. The Standard Service Set was planned by Snap-on to help mechanics make more money! Every one of the 166 tools in the set is a basic in handling service operations most frequently met. The big, six-drawer chest keeps them safe, and right at your finger tips as needed. Check over the list—then check your own tool kit!



166 TOOLS IN BIG 6-DRAWER CHEST

Midget Set in Box	Plastic Tip Hammer
Penet Set	Feeler Gauge
Master Supreme Set	Spark Plug Gauge
Boxocket Set	Hack Saw Frame
Dwarf Boxocket Set	Carbon Scraper
Open End Wrench Set	Wire Brush
Tappet Wrench Set	Valve Lifter
Ignition Wrench Set	Valve Key Replacer
Screw Driver Set	Valve Spring Compressor
Spark Test Screw Driver	Ignition Pliers
Screw Starter	Gripping Plier
Phillips Screw Driver Set	Needle Nose Plier
Chisel and Punch Set	Diagonal Cutter
Pry Bar	Battery Plier
Ball Peen Hammer	Metal Tool Chest

TALK IT OVER with your Snap-on Man—it's easy to plan a steady replacement of misfits with Snap-on money-makers! For big free catalog of 4000 Snap-on tools, ask your Snap-on Man, or write

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*Snap-on is the trademark of Snap-on Tools Corporation.

Snap-on Tools
THE CHOICE OF BETTER MECHANICS



Leading fleets across the nation depend on Thermoid for safe stops

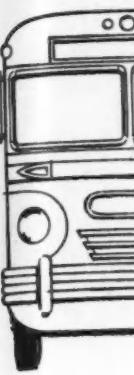
Thermoid Brake Blocks are used by fleets from coast to coast. They're the original equipment choice of leading bus and truck manufacturers. Compounded under Thermoid's exclusive Dry Mix Process, originally developed for heavy duty amphibious military vehicles, Thermoid Brake Blocks meet the most rigid stopping tests, regardless of weather conditions or operating temperatures.

Despite increased speed, power and congested traffic, you can rely on the long lasting dependability and economy of Thermoid Brake Blocks—designed for maximum safety at minimum cost per mile.



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the standard of precision processing in
brake lining, brake blocks, hydraulic fluid,
cylinder assemblies, hydraulic brake parts.



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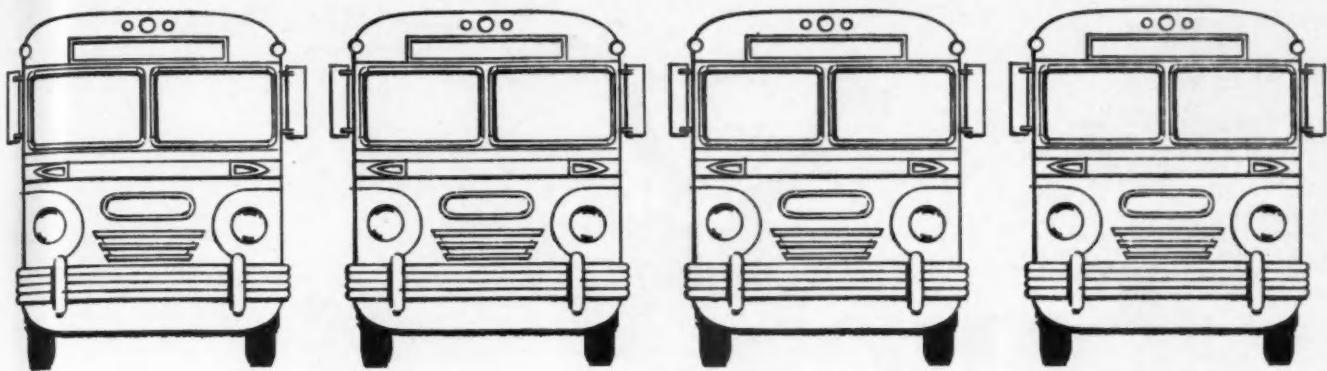
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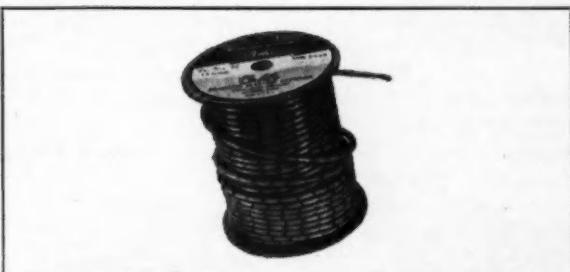
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TRANSPORTATION" AWARDS FOR 1954

WINNERS USE PACKARD CABLE THAN ANY OTHER MAKE



PACKARD IGNITION CABLE—Long considered the standard of the automotive industry, Packard high-tension cable is original equipment on more cars, trucks, buses and tractors than any other cable. Packard FOUR-FORTY and Packard LACKARD ignition cable are designed to deliver balanced performance in every application. For dependability on the job, choose Packard.



PACKARD LOW-TENSION CABLE—As with Packard's two other products, Packard low-tension cable is used as original equipment on more cars, trucks, buses and tractors than cable of any other make. Packard's 249 COMPOUND insulation, by every laboratory test and by the test of long, hard usage in the field, has exceptional resistance to heat, oil, chemicals and abrasion.

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TRADE MARK

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A GENERAL MOTORS PRODUCT  A UNITED MOTORS LINE

AVAILABLE THROUGH DISTRIBUTORS EVERYWHERE



Laugh it off!

Moving Van Driver: "You say that they've found out about the Reefer Truck Driver's trial marriage?"

Haulaway Driver: "Yes, and he has been arrested."

Moving Van Driver: "What did they charge him with?"

Haulaway Driver: "Operating without a license!"

ccj

Parts Clerk: "Congratulations. Where are you going to spend your honeymoon, Mabel?"

Maintenance Steno: "In Germany. Jimmy told me that as soon as we were married he would show me where he was wounded in the war."

ccj

Dynamometer Specialist: "Red, how in the devil can you afford that late model Caddy on your salary?"

Brake Mechanic: "By exercising free enterprise, son. In my spare time I run a pretty big goose farming operation."

Dynamometer Specialist: "So you're a goose farmer, huh? How do you tell the geese from the ganders?"

Brake Mechanic: "We don't even try. We just turn 'em loose and let them find out for themselves."

ccj

Ballet Dancer: "Darling, who is that handsome hunk of masculinity I've seen squiring you around the past few days?"

Bubble Dancer: "Handsome hunk is right, sweetie. He's shop foreman for a big southern trucking concern in town on a two-week vacation."

Ballet Dancer: "When did you meet him?"

Bubble Dancer: "He stopped in to see my show one night right when I had the first blowout in my career. From then on he began seeing a lot of me."

On the second morning, the new freight loader, a sort of glad lad character, greeted his warehouse superintendent with a loud, "Hiya, this mornin', Mac?"

The "Super," who was well known as a strict disciplinarian, took the new man aside and asked, "Do you realize who I am? you are supposed to say, 'Good Morning, sir,' when addressing me. I have complete charge of this freight loading operation and over one hundred men."

"You've got a good job", said the freight loader, "Don't start lousing it up".

ccj

Said the man's wrist watch to the lady's wrist watch—"Let's tick together."

ccj

Freight Loader: "I call her my little Candy Bar."

Yard Hostler: "Why? Because she's so sweet?"

Freight Loader: "No, because she's half nuts."

— "Cici Jay" —



"Might be a good idea to get to know his secretary better. She seems to carry a lot of weight in the right places!"

Louie: "What do you do to keep your figure so beautiful?"

Butterfly Babe: "I'm just lucky, I guess. I never pay much attention to my figure."

Louie: "You sure don't know what you're missing!"

ccj

Elusive Elmer, our super-annuated, bachelor shop foreman, says he met a most delectable damsel the other night. By way of breaking the ice he said, "Hello, there, cutie — where've you been all my life?"

Elmer says she deflated his ego right quick when she answered, "Well for the first half of it, I wasn't born!"

ccj

A bulletin has just been issued at Fleety-Fleet Motor Express stating that there will be no more grab bag holiday parties in their office. It seems that the one who was grabbed by a road truck driver complained to the president.

ccj

Manager to House Detective: "Did you find any of our towels in the suitcase of that travelling freight auditor?"

House Dick: "No, I didn't find any towels in his suitcase. But I found the chambermaid in his grip."

ccj

Foggy Phil, who raises rabbits on the side, says they converse with each other just like human beings. Says he was down at the hutch the other night and overheard Mama Rabbit saying to Papa Rabbit, "Peter, you now have 32. Would you like to try for 64?"

Resume Work

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new truck
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NEW space-saving, high economy, big capacity COE models—3 series, 12 models from 21,000 to 30,000 lbs. GVW—50,000 to 65,000 lbs. GCW. Also available with sleeper cab.



NEW Super Space Saver ROADLINER® conventional truck-tractors that haul all 35-foot trailers in 45-foot limit. GCW ratings, 42,000-65,000 lbs.



PLUS factory-installed, Underwriters approved LPG power, available as optional equipment in 54 models in GVW ratings from 4,200 to 45,000 lbs.



PLUS 10 diesel engines for 30 models. The INTERNATIONAL line of 185 basic models offers widest choice of power—30 engines, gasoline, LPG and diesel.



NEW power steering for all models. New light-duty truck features include tubeless tires, optional automatic transmission and overdrive.



NEW multi-stop models with METRO bodies—14,000 to 16,000 lbs. GVW. 10 other models—5,400 to 11,000 lbs. GVW—with METRO and METROETTE bodies available with new METRO-Matic transmission.



NEW RF-230 60,000 lbs. GVW six-wheeler added to line of 24 six-wheel models—all with new maintenance reducing, extra rugged rubber-bushed bogie.

NEW MODELS NEW FEATURES

**INTERNATIONAL keeps 'em coming...
all the time, to do today's truck jobs
better, at lower cost!**

INTERNATIONAL continually brings you great new truck features, new all-truck models, new value for your truck dollars, in the world's most complete truck line. **INTERNATIONAL** follows this policy to give you right now the developments that will help you do your hauling jobs better, cut your costs and boost your profits. Before you make any truck purchase, check all the new developments shown here—then let your **INTERNATIONAL** Dealer or Branch give you all the reasons why an **INTERNATIONAL** is your best truck buy.

INTERNATIONAL HARVESTER COMPANY • CHICAGO

International Harvester Builds MCCORMICK® Farm Equipment and FARMALL® Tractors...Motor Trucks...Industrial Power...Refrigerators and Freezers

See the season's new TV hit, "The Halls of Ivy," with the Ronald Colmans, Tuesdays, CBS-TV, 8:30 p.m., EST



INTERNATIONAL TRUCKS

"Standard of the Highway"



Fleet Chief Sparks Team to Top

THIS is the intriguing story of an automobile transporter fleet that deliberately set its sights on the nation's top safety award . . . and won it. It's the story of a company president, a safety director, a management staff and a 300-man driver team who work at safety 24 hours a day, 365 days a year.

It's a story of more than 14 million miles a year with an accident frequency of .26 per 100,000 miles. Yes, the decimal is in the right place. That means approximately 400,000 miles between chargeable accidents. Or put another way, it means that on an average seven out of every eight drivers ring up about 50,000 miles a year with no accidents at all.

In addition, it is a story that has not hidden its light under the bushel for during the period from July 1, 1953 to June 30, 1954 this winning combination took top safety honors from both the National Safety Council and National Automobile Transporters Association. While technically this award was limited to fleets in its own class, actually the accident frequency was second lowest attained by fleets in all classes.

And the beauty of it all is that

almost any fleet can do the same job provided they mix in *all* the ingredients spelled out in this simple but effective formula.

The Cast

The characters, in the order of their appearance, are:

The companies involved—M & G Convoy, Inc. and its associated firm, Hulbert Forwarding Co., Inc., both of Buffalo, N. Y. Together they haul new Chrysler automobiles and trucks from Buffalo and Detroit to 13 eastern states.

The president—Parke Davis, who spark plugs the whole idea.

The safety and personnel director—Richard Daily who provides the technical know-how, and coordinates all safety activities.

The 300 driver team—who largely own their own rigs and without whose abilities and whole-hearted enthusiasm the plan would die on its wheels.

The maintenance staff—heeded by Maintenance Director James Krochot—who inspect every rig before every trip, to assure mechanical excellence.

And last but not least, all the rest

of the organization from partner Edward J. Hand (he's president of M & G and secretary treasurer of Hulbert) right on down to the newest clerk. In these companies everybody works at safety and the visitor knows it the minute he sees the huge championship plaque right inside the door.

Top Management Push

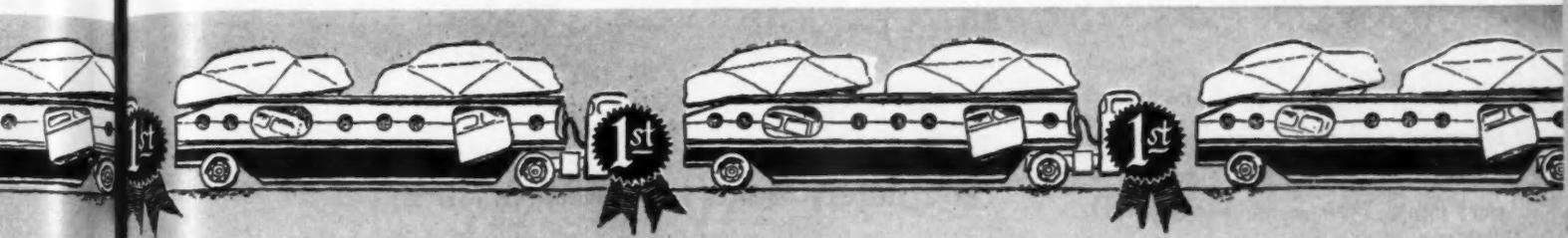
Our story must, of necessity, begin with President Parke Davis. Without his type of top management push and front line support no safety plan of this caliber could succeed. Years ago he recognized the dollars and cents savings of top grade safety performance. Since then he has left no stone unturned to achieve his goal. His activities on the safety front can be divided into two basic parts—those which he has done himself and those which he has delegated. Both are vital.

On the personal side, Mr. Davis set out to make his whole organization work as a team. He knew that he must have the friendship and personal support of every employee—especially the drivers. So his

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first step was to eliminate the "ivory tower" aspects of being president.

His office illustrates the point. It's really only half an office, shared with Partner Hand, there is no desk; only a table (which holds the necessary telephones and intercoms), some comfortable chairs and an atmosphere of informality. Every man in the outfit knows that if he has an idea or a "beef" the door is always open. For Parke Davis' first job is to be father confessor to his men. Everybody knows about this policy and it works effectively—seldom, if ever, abused.

Next this genius for getting along with people recognized that men with independence and a chance to increase their personal earnings would have more reason to do a better job. So he bucked what well may be a national trend in the opposite direction and sold virtually all of his power equipment to individual drivers. As independent business men, it was found that these driver-owners not only took a greater interest in safety but in all-important maintenance as well. We'll have more about that later on.

An enthusiastic president, a top safety director and a 300-man driver team have won this auto transport fleet outstanding awards and an accident frequency of .26

By Bart Rawson

Editor, Commercial Car Journal

Then there was the vital problem of management-union relationship. Mr. Davis met it head-on. He called a union-management conference, not only for his own company, but for all similar groups operating in the Buffalo area. Would organized labor recognize the inherent value of a safe driver? Would it go along with management in taking positive corrective action? At the conference, union representatives agreed to cooperate to the fullest extent in all safety

measures, and they now continue to give their fullest cooperation.

Safety Know-How

The transition from the personal to the delegated side of top management's role in safety came in the hiring of a personnel and safety director.

It would be hard to find a man with better safety qualifications

(TURN TO NEXT PAGE, PLEASE)



14 million miles a year and 400,000 miles between chargeable accidents; that's the story of this auto transport fleet. Their formula is this: get yourself a fireball president, select a safety director who has the know-how, give your drivers full responsibility for their equipment. Then everybody will be thinking safety—and doing something about it . . .

than Dick Daily. It is not our intention to clutter up this account with personal bouquets. But here is a man who has been safety director of a large common carrier of property, of a large transit bus fleet and a one time director of traffic for the New York Safety Council. In addition he was an instructor at the well-known Center of Safety at New York University where he earned his master's degree on top of college credits.

Daily works at safety almost 24 hours a day and manages to have an impromptu safety meeting *every morning* (it's hard to resist the daily pun) before drivers hit the road.

But to understand his activities we must go back to the beginning: which obviously means the selection of new drivers. What manner of men does he hire? How does he separate the wheat from the chaff?

Driver Requirements

First of all Daily knows the kind of man he wants:

If married, his family life must be well adjusted. There must be no jealousies.

...Top Safety Honors (continued from page 68)

If single, he must be unusually stable.

If an old driver, he must furnish specific references of past employment which are checked on the spot by phone from a nearby office. In addition he must furnish *proof* of a good safety record. This usually comes in the form of tangible evidence such as a shoulder patch or pocket card.

If a new driver (with no previous commercial experience), he must furnish business references and a darned good reason why he wants to work for the company.

All drivers must be a minimum of 25 years of age. Daily finds he needs this for stability.

Except in rare instances, all must have at least one year of high school in their formal education record. Actually, Daily feels the higher the education level the better the driver, and he has a number of college graduates working for the company. While this is contrary to many fleet policies, Daily argues that by owning their own rigs, his drivers have enough independence and enough earning capacity to satisfy even the college graduates for long periods of employment.

Finally there is a real stopper. Every new driver must be in good financial condition in order to own his tractor.

To obtain this information from a prospective driver takes about 45 minutes in the initial interview. Even Daily's own bosses sometimes think this is too much time to spend, but they go along with Daily's proven record that during

the 45 minutes he can get enough facts to tentatively hire the man on the spot. Only a California personality test and a physical examination then stand in the driver's way.

Training Period

If accepted, the new driver then begins an intensive two weeks training period under the direct supervision of a driver coach. These coaches are company drivers with proven ability for instruction. Eight are available on a full time basis and six more are qualified for peak periods.

After preliminary checks on basic driving techniques the new driver and his coach hit the road as a driving team. Throughout the two week period the coach watches and instructs constantly, using an unusually complete eight page check sheet as a reminder. This includes the usual driving practices, law observance, and a special watch on overhead clearances. It also covers loading and unloading techniques which are a vital part of the new car carrier operation.

When the new man has satisfactorily passed this two week training period with the driver coach, he then goes down for his union card and comes back to the safety director for a final interview. Here the conversation centers around company rules and policies. The driver is given a company rule book, an ICC log book, a further briefing on loading and claims procedures

(TURN TO PAGE 138, PLEASE)

1955

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What

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Commercial Car Journal
Special Report

1955—The Golden Anniversary

This year SAE is observing its 50th year of service to the automotive industry in a Golden Anniversary which will set the theme for all meetings and activities during 1955. Because of this and because CCJ readers have benefited immeasurably from these years of cooperative work of the Society, we include here a general discussion of this organization as the third study in our series on associations. The following pages will acquaint fleetmen with some of the work of those members who have participated actively in specific engineering projects. Whether or not you are in a position now to actively participate in this work, you will want to support the efforts of the Society through your better understanding and appreciation of its work. . . .

- Air Transport
- Aircraft
- Aircraft Powerplant
- Body
- Diesel Engine
- Engineering Materials
- Fuels & Lubricants
- Passenger Car
- Production
- Tractor & Farm Machinery
- Transportation & Maintenance
- Truck & Bus

What is the SAE?

Specifically, SAE is the professional society of the automotive industry—an organization comprised of some 20,000 engineers meeting on common ground to exchange information on various phases of transportation. It has been called a family of interests, with design engineers, production engineers, petroleum technologists and those in charge of fleet operation and maintenance getting together to set up industry standards and recommended procedures for the promotion of efficiency and economy.

How does it function?

The society is largely composed of working members—engineers from various industries who meet in regular sessions to discuss technical problems and developments on a professional basis. They may introduce new ideas for manufacturing, design or operation; or they may suggest new procedures for testing, measuring or producing products relating to the automotive industry. Many times this discussion and study leads to standards for the industry which in turn result in better and cheaper and safer products.

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How are the activities carried out?

Nearly one-fourth of the membership participates actively in the administration of national and local activities. Sections and groups conduct monthly meetings in more than 40 automotive centers in the U. S. and Canada. These take the form of technical sessions, visits to local plants and factories, social gatherings or group discussions.

How is the organization set up?

At the national level the Society's meetings are planned around 12 professional activities groups. These include: 1. Air Transport, 2. Aircraft, 3. Aircraft Powerplant, 4. Body, 5. Diesel Engine, 6. Engineering Materials, 7. Fuels and Lubricants, 8. Passenger Car, 9. Production, 10. Tractor and Farm Machinery, 11. Transportation and Maintenance, 12. Truck and Bus. There is a vice president representing each Activity on the Society's governing board—the SAE Council. Each Activity is guided by a committee named by the vice president each year to set up programs and events and to consider projects dealing with their respective interests.

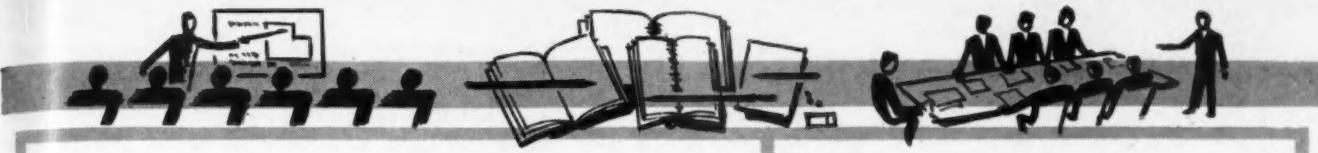
What is the SAE Technical Board?

This interchange of information carries through into the activities of the SAE Technical Board, an 18-man group which is appointed by the President to supervise and guide the work of SAE technical committees in their service to industry. These committees work on technical problems which lend themselves to cooperative solution. The Board's work is primarily that of deciding upon specific studies which will serve the industry and of setting up working committees to carry out this assigned work. The work of these technical committees is financed by funds from the automotive industries which benefit from the results of their efforts.

SAE Standardization Publications

Results of these studies are published in the form of Standards, Recommended Practices or General Information Reports. Standards are specifications based on sound, established engineering practice. The Recommended Practices are intended only as guides toward standard engineering practice. And the General Information Reports are set up primarily to present data useful in automotive work.

Examples of standards set up by the organization include those for testing and inspecting all types of electric lamps and turn signals used on automotive equipment. Standards have been set up for piston ring and groove dimensions with regards to radial wall thickness, width of lands between rings, sizes of oil ring groove drain holes and end clearances. Similar standards developed on brakes help the entire industry to improve design, operation and maintenance. Of special importance to fleetmen is an SAE Recommended Practice set up on truck ability prediction. This step-by-step procedure enables the purchaser to determine performance obtainable from a truck with a given set of characteristics and is considered the best if not the only such guide available to him today. Other Recommended Practices include procedure for preventive maintenance and inspection; standardized cards for maintenance instruction and CA dimensions. Examples of general information include data on fifth wheel heights, truck tractor trailer clearances and minimum clearances tables for vehicles.



NATIONAL MEETINGS

- Golden Anniversary Annual Meeting**
Detroit—January 10-14
- Passenger Car, Body & Materials**
Detroit—March 1-11
- Production Meeting and Forum**
Cincinnati—April 18-21
- Aeronautic Meeting**
New York City—April 18-21
- Summer Meeting**
Atlantic City—June 12-17
- West Coast Meeting**
Portland—August 15-17
- Tractor Meeting & Production Forum**
Milwaukee—September 12-15
- Transportation Meeting**
St. Louis—October 31-November 2
- Diesel Engine Meeting**
St. Louis—November 2-4
- Fuels and Lubricants Meeting**
Philadelphia—November 9-10



MONTHLY MEETINGS HELD AT

ALBANY	MONTREAL
ATLANTA	MUSKEGON
BALTIMORE	NEW YORK
BOSTON	PEORIA
BUFFALO	PHILADELPHIA
CHICAGO	PITTSBURGH
CINCINNATI	PORTLAND
CLEVELAND	RICHMOND
DALLAS	ST. LOUIS
DAYTON	SALT LAKE CITY
DENVER	SAN DIEGO
DETROIT	SAN FRANCISCO
FLINT	SEATTLE
HARTFORD	SPOKANE
HONOLULU	SYRACUSE
HOUSTON	TORONTO
INDIANAPOLIS	TULSA
KANSAS CITY	VANCOUVER
LOS ANGELES	WASHINGTON
MILWAUKEE	WICHITA
MINNEAPOLIS	WILLIAMSPORT

What is its value to fleetmen?

Fleetmen profit indirectly from most of the professional activities though they will be more directly concerned with:

THE T&M ACTIVITY which grapples with problems of operation and service of trucks and buses; the **TRUCK & BUS ACTIVITY**, which deals with design and building of their equipment; the **DIESEL ENGINE ACTIVITY**, which specializes on diesel engine design and production problems; and the **FUELS AND LUBRICANTS ACTIVITY**, which concentrates on petroleum products and problems relating to their use in engines. While most of this discussion will center in the **T&M ACTIVITY**, it should be recognized that many of the other groups have been instrumental in assisting the fleetman in solving equipment problems.

The **T&M ACTIVITIES** offer the technical men responsible for operation and maintenance of vehicle fleets an opportunity for direct contact with the engineers who design and produce the equipment they use. Papers prepared by the operators themselves often influence the design of future vehicles, while studies offered by company engineers provide valuable information on factory developments.

How does it help the trucking industry?

Results cannot always be fully appreciated, though the advantages are tangible and profitable to all those concerned with vehicle transportation. Industry standards cut down inventory and permit interchangeability of parts within limitations. Data developed by professional men often provide the basis for sound legislation, guiding legislators in setting up minimum requirements in various phases of operation. The information arising from these studies contributes to safer operation of vehicles and certainly to better vehicles at a cheaper price. Any fleet operator who works at being an SAE member will get ideas to help him with his work. These ideas will come from other operators, from design and petroleum engineers, from specialists in the design and production of such components as tires, brakes, valves, ignition systems, injection equipment and a long list of others.

How is this information disseminated?

There are three means in which this type of information reaches those who require it. In most cases the data is published in the SAE Handbook. The book is revised each year to include all studies accepted by the organization as a standard, a recommended practice or as general information useful to members.

What other services does the SAE provide?

The SAE member automatically becomes a subscriber to the SAE Journal, a monthly technical publication which carries articles developed from papers given by speakers at the local and national level. In addition news of members and general news of the society is carried in the Journal.

A roster of members, bound and printed in book form is available free of charge, to the SAE member.

A free placement service is offered to its members by the organization. The Society carries an impressive listing of "available positions" as well as "positions wanted" and these bulletins are circulated to those using the service.

SAE members may purchase SAE Transactions and scores of special publications and meeting papers at reduced prices.

SAE members can attend local and national meetings, without paying a fee and are kept informed of them through program mailings.

SAE needs competent, loyal supporters to assist in this task of clarifying problems inherent to a rapidly growing automotive industry—but more than that—YOU need the SAE.

Tractor No	46
Accesso	24304
Complaint	OK
Rings	OK
Date Test	1-27-55
Idle Test	OK
Light Load	OK
Ignition Test	OK
1200 R.P.M.	OK
2000 R.P.M.	OK
Check for	OK
Elastic	OK
Jumpy	OK
Vacuum	OK
W.O.T.	OK
FORM WL 243	

All tractors are tested every four weeks on the dynamometer. Results are recorded on an 8½ x 11 card like this.

TECHNICAL COMMITTEES DEVELOP—

SAE Standards which include:

Automotive Brake Definitions and Nomenclature
Bumper Heights
Certificates of Maximum Net Horsepower
Commercial Vehicle Nomenclature
Fifth Wheel Kingpin Dimensions

Rating of Side Opening Power Take Offs
Storage Batteries and Spark Plugs
Lighting Equipment for Motor Vehicles
Piston Rings and Grooves
Radiator Nomenclature

Recommended Practices which include:

Color Code for Identification of Brake Lining
Truck Ability Production Procedure
Motor Truck Chassis Record Form
P.M. and Inspection Procedure
Maintenance Instruction Cards
Semi Trailer Brake Connection Locations

Side Mounted Gasoline Tanks
Electrical Connector for Truck Trailer Jumper
Voltages for Diesel Electrical System
Generator and Distributor Mountings
Preignition Rating of Spark Plugs
Headlighting Inspection Code

General information material which include:

Truck Tractor Trailer Clearances
Truck Tractor Fifth Wheel Heights

Truck Tractor Minimum Clearances
(CA dimension)

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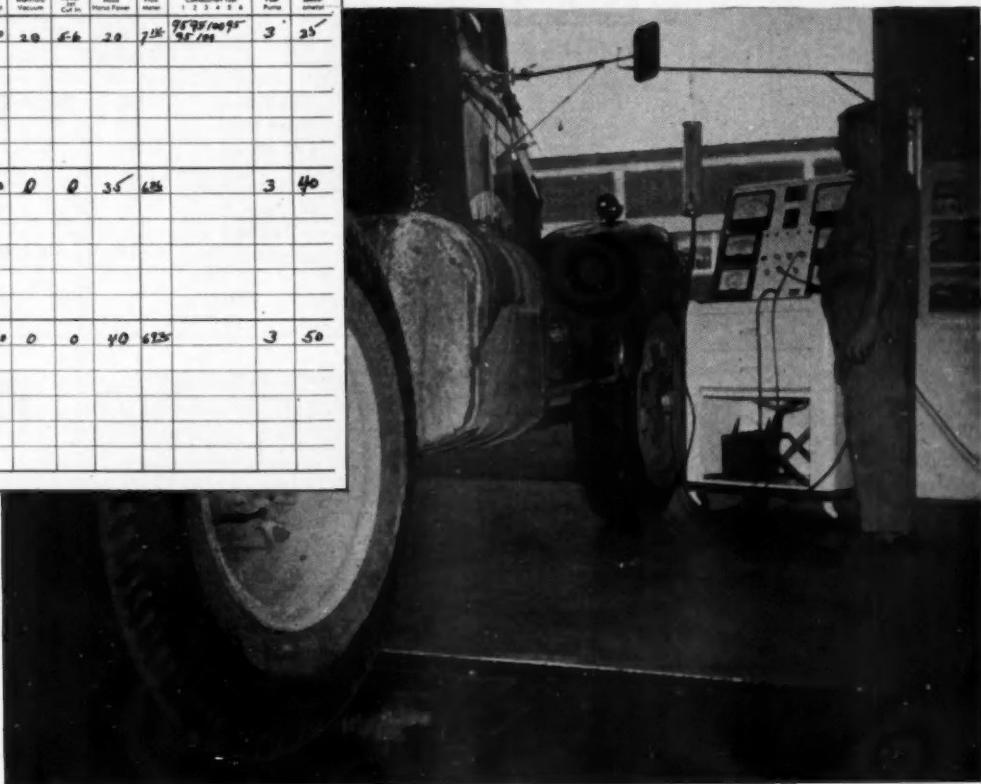
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WINN & LOVETT GROCERY CO. DYNAMOMETER TEST REPORT										Date 8-27-54	
Tractor No. 46		Starting OK		Missing OK		Idling OK		Power OK			
Miles Test 24,304											
Rings OK		Gas Mileage 55									
Date Tested	Timing Set At	Cam Dwell	Air Fuel Ratio	Governor Set At	Manifold Vacuum	Power Cut In	Road Horse Power	Flow Meter	Combustion Test	Fuel Pump	Speedometer
8-27 30	35	15	15	2000	20	66	20	715	95.9% / 100.5%	3	35
Idle Test Light Load Ignition Test 1200 R.P.M.											
2000 R.P.M. Check for Erratic or Jumpy Vacuum											
W.O.T. 8-27 30 34.5 15.5 2000 0 0 40 625 3 50											

All tractors are tested every four weeks on the dynamometer. Results are recorded on an 8 1/2 x 9 in. card like that above



IN THE first three-months' use of a dynamometer and a flow meter at its new truck maintenance shop in Jacksonville, Fla., the Winn & Lovett Grocery Co. reduced lost time from road breakdowns by at least 50 per cent and increased truck mileage an average of two-tenths of a mile per gallon of gasoline.

M. W. Abbott, superintendent of maintenance, believes that these records may be improved upon as the shop mechanics become more familiar with the diagnostic results from these pieces of equipment. To aid in a correct reading of the mechanical diagnosis of truck symptoms and for later comparisons, Mr. Abbott devised a special test report card, which is reproduced above.

This 8 1/2 x 9 in. card must be filled out in complete detail by the operator of the dynamometer and flow meter, which are used together. The card is of a routine checkup of tractor No. 46 with 24,304 miles on its speedometer. In this case everything was found to be OK,

Dynamometer Tests

Up Fuel Mileage .2 mpg

Testing all vehicles every four weeks also has cut in half time lost due to road breakdowns for Winn & Lovett Grocery Co.

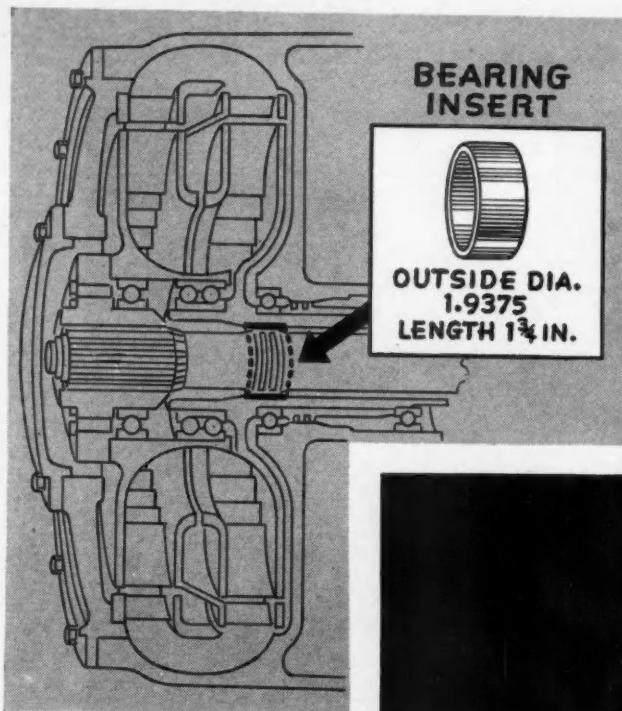
including starting, idling, power and rings. Gas mileage was checked at 5 1/2 miles per gallon. The card has ruled columns for recording such data as the date tested, timing, cam dwell, air fuel ratio, set of governor, manifold vacuum, power jet cut-in, road horse power,

flow meter, combustion test, fuel pump and speedometer.

Three Tests

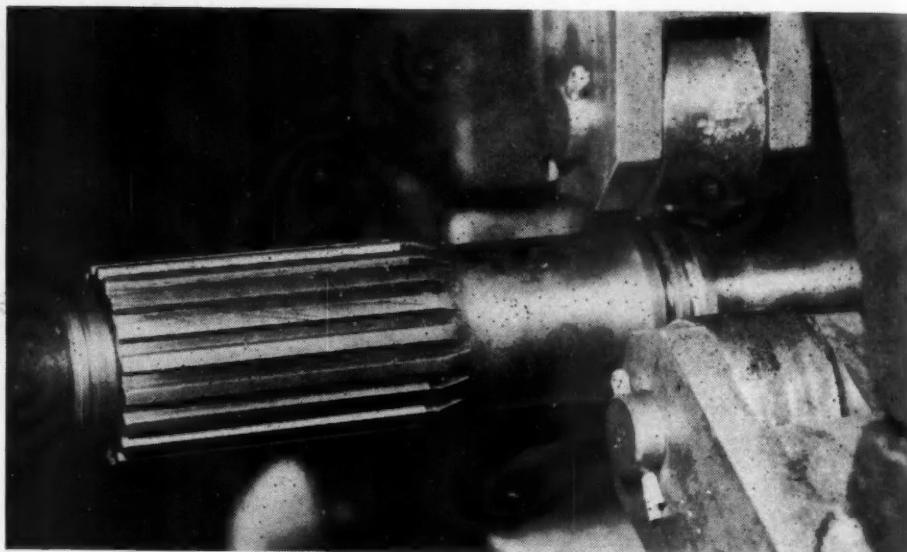
Reports on these checks are placed on the front of the card as tests are made under such varying

(TURN TO PAGE 126, PLEASE)



Reconditioned Parts				
	Number of Pieces Reclaimed	Cost of Reclamation	Cost of New Replacement	Our Savings for 12 Months
Outer Seal....	172	\$3354.00	\$5865.20	\$2511.20
Inner Seal....	82	1271.00	2398.50	1127.50
Fan Hub.....	43	827.75	1490.00	662.25
Vibration Dampener..	35	432.50	605.85	173.35
Plunger & Bushing Assembly...	119	654.50	1596.99	942.49
Total Savings.....				\$5416.79

Above. Phantom drawing of the impeller shaft and the new bearing which is made up in the shop. Right. The rollers designed by Mr. Wright to roll down oil ring grooves for the new bearing insert



Parts Salvage Saves Cincinnati

Through chrome plating, metallizing or reworking of worn parts this transit property



WE OPERATE 362 coaches in Cincinnati, using 244 GM diesels, 14 Mack diesels, and 104 gas buses in transit service in this area. Salvage is part of our maintenance routine, for experience shows that there are few wearing parts that cannot be restored to original specifications through some salvage routine. Many times, too, the rebuilt assembly will operate more miles than the original.

A review of our cost records for the past 12 months reveals some surprising figures. We have

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173.35

942.49

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Chrome Plated Parts

	Number of Pieces Plated & Ground	Cost of Chrome Plating & Grinding	Cost of New Replace- ment	Our Savings for 12 Months
Differential Spider.....	26	\$152.10	\$257.92	\$105.82
Differential Spider.....	3	17.55	40.77	23.22
Outer Race.....	70	829.50	1809.50	980.00
Outer Race.....	10	115.00	315.00	200.00
Inner Race	15	157.50	424.95	267.45
Front Bearing Cap.....	36	354.80	408.24	53.64
Engine Camshaft.....	24	668.40	1392.72	724.32
Pump Shafts.....	50	82.50	117.50	35.00
Clutch Release Shaft.....	60	309.00	658.20	349.20
Clutch Release Yoke.....	59	581.15	969.37	388.22
Brake Camshaft (front)...	3	14.55	38.13	23.58
Brake Camshaft (rear)...	14	105.70	318.78	213.08
Brake Camshaft.....	12	73.80	151.36	77.56
Brake Camshaft.....	6	32.10	51.30	19.20
Free Wheeling Cam.....	20	535.00	775.20	240.20
Flange Spline.....	16	125.80	358.40	232.80
Flange Spline.....	2	17.70	78.82	61.12
Flange Spline.....	9	79.85	318.60	238.95
Flange Spline.....	6	47.10	105.54	58.44
Flange Spline.....	4	31.40	111.72	80.32
King Pin.....	9	39.60	64.62	25.02
King Pin.....	16	70.40	88.16	17.76
King Pin.....	7	30.80	31.29	.49
Direct Outer Clutch.....	8	84.40	298.24	211.84
Universal Cross's.....	92	395.60	1140.80	745.20
Flange.....	5	39.25	63.15	23.90
Reverse Gears.....	9	94.95	324.27	229.32
Gov. Oper. Shaft.....	35	75.25	214.90	139.65
Vibr. Dampener Cone.....	19	40.85	79.99	39.14
Bearing Gages.....	16	136.80	516.16	379.36
Idler Hub.....	2	11.70	25.08	13.38
Shifter Fork.....	9	52.65	143.91	91.26

Total Savings..... \$6286.44

By Roland Wright
Superintendent of Equipment
Cincinnati Transit Co.

only wear, permitting escape of the fluid, but the impeller housing wears at the bearing area of the three seal rings. A new impeller costs us \$191.50. We repair as noted below at a cost of \$12. Since we have approximately 25 failures of this type a year, we are enjoying a saving of \$4487.50 a year on this salvage job alone.

Impeller Reclaiming

Here is the way this assembly is reclaimed: First the shaft itself is mounted on a lathe. A fixture with steel three rollers is set over the ring grooves and they are rolled down to a perfect surface. We build up this fixture for this purpose. It consists of three steel rollers mounted on adjustable brackets which permit application of immense pressure through a screw adjustment. It is not necessary to recut the grooves as we are concerned primarily with re-establishing perfect concentricity of the shaft groove outer surfaces. It is necessary to clean up edges of the grooves with lathe tool after rolling before a ring can be fitted with proper clearance. New rings are installed and the shaft is ready for re-use. The original cost of this shaft is \$58.80. We roll the shoulders down on this jig at a cost of the labor alone which amounts to something like \$4. Thus we are saving \$1370.00 per year in this salvage operation.

The impeller is salvaged by reboring the diameter to 1 15/16 in. and inserting a sleeve made from cold rolled steel. Dimensions are: inside diameter, 1.783. Length, 1 3/4 in. See inset diagram for detail of location.

Assemblies rebuilt in this manner several months ago are still providing good service. We estimate that the rebuilt assembly will last as long as the original. And there is no reason why new bushings cannot be installed at a later date so that the impeller and shaft need never be replaced.

(TURN TO PAGE 146, PLEASE)

\$17,500 Yearly

has not only saved money but has upped parts life as well

actually enjoyed a saving of \$17,560.73 by either (1) chrome plating, (2) welding, (3) metallizing, or (4) redesigning and rebuilding. Of course this is not all done in our own shops. The cost of plating equipment, for example, cannot be justified in a fleet of this size.

However, where we are not equipped to do the work, we find reliable facilities in and around

Cincinnati who can still rack up some substantial savings for us. We do use welding and metallizing equipment, but one of the best examples of the restoration of assemblies is the salvage of impellers on GM torque converters.

We experience considerable wear of the impeller shaft seal at the oil retaining rings as noted on the drawing. The oil ring grooves not



\$10 →

ShopHints

\$25 ↓

Here are some swell time savers for fleet shops.

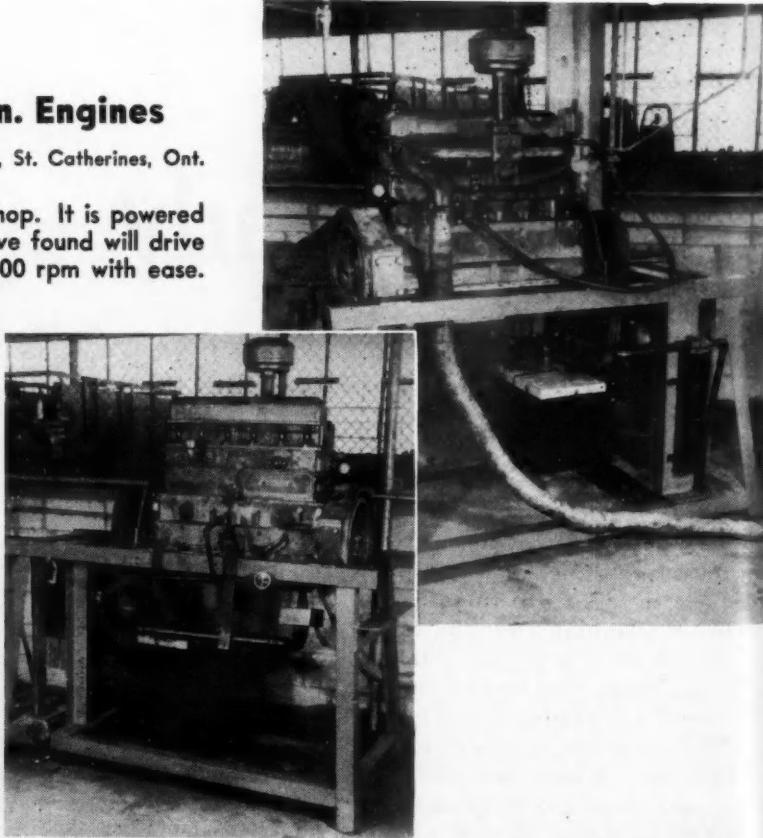
Let us have your ideas for new tools or short cuts to service. We'll pay \$10 and \$25 for good ones.

Run-in Stand Handles 450 cu in. Engines

By G. Miller, Maintenance Mgr., Direct-Winters Transport, St. Catherines, Ont.

This engine run-in stand was built in our own shop. It is powered by a 10-hp, 3-phase, electric motor, which we have found will drive a 450 cu in. engine under full compression at 1000 rpm with ease. Three sheaves of a four-sheave pulley transmit power from the motor to the engine. The other sheave is used to drive two Dodge oil pumps submerged in the square sump shown at bottom of the pictures. This sump tank is divided into two sections. After the initial filling, one pump circulates oil from one section through a full-flow filter to the other tank. From here the oil is pumped by the second pump and fed, under controlled pressure, to the engine. Standard engine relief valves are used to control this pressure. Oil plug in the pan is removed and the oil drains back into the first sump tank. An oil gage is mounted directly to the oil gallery.

Engine load is controlled by raising or lowering the electric motor using an old Fruehauf, swayback landing gear. The engine cooling system is connected to the water main with a valve open to provide 4-lb. pressure.



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By A. R

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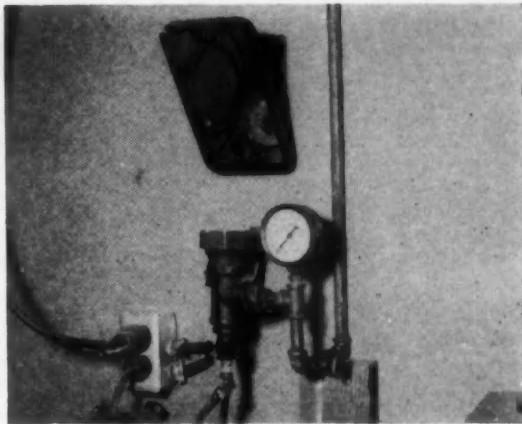
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Mirror Speeds Spark Plug Checking

By Albert Renken, Addieville, Ill.

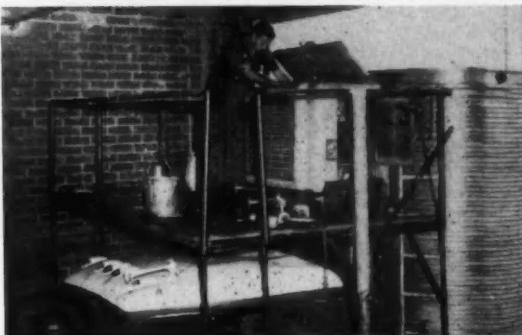
A small, rectangular mirror, mounted at an angle on the wall above the spark plug tester, gives safe, accurate readings on plugs being tested. It speeds plug checking by giving a clear view at eye level, eliminates need to look down into tester. It is safer since it avoids the possibility of the glass in the tester shattering in the face of the person doing the testing.



Scaffolding Eases Reefer Maintenance

From Winn & Lovett Grocery Co., Jacksonville, Fla.

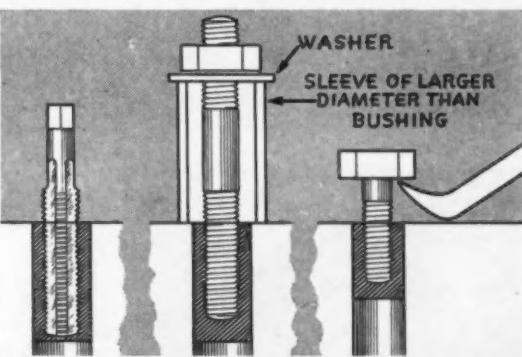
Reefer equipment is important in this fleet. A large part of the cargo hauled are perishables and must be kept refrigerated. Every refrigeration unit gets a daily check-up, and road calls because of reefer failure do not average more than one a month. Besides having two men who are specialists in this kind of equipment, here is another way the fleet gets better reefer service. The pipe scaffolding is made to fit clear the tractor. It gives the mechanic plenty of working space at the right height.



Bolts Pull Worn Bushings and Sleeves

By Frank Coulomb, Inglewood, Cal.

Sometimes it is not possible to get back of a bushing or sleeve with a bushing puller so as to be able to remove it. In these cases, I use a standard tap to thread the inside diameter of the bushing, selecting a tap size that will make a good, strong thread. In some cases, the bushing will come loose while being tapped and can be pulled out. For the tougher ones, I use a draw-bolt threaded on both ends, as shown in the diagram in the center. Around the bolt, I place a sleeve large enough to allow the bushing to come through. On top of sleeve goes a washer and a nut. Tightening the nut will pull the bushing. For shorter bushings, a regular bolt and pinch bar can sometime be used.



Cart Cuts Dual Tire Changing Time

By A. Rae, Garage Supt., Dominion Auto Carriers, Windsor, Ont.

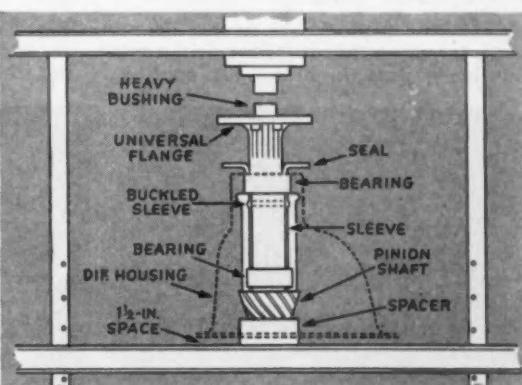
One of the heavy and more disagreeable jobs we encounter in our shop is removing heavy-duty dual tires. This is almost too big a job for one man ordinarily and getting at the tire under a fender makes it even tougher. To cut time on these jobs and make them easier, we designed this tire carrier. It is a rectangular-shaped frame of $1\frac{1}{2}$ x $\frac{1}{2}$ -in. channel iron with an iron bar handle welded to one end. Two discarded roller bearings serve as casters to make it portable. When removing tires, we jack up the wheels sufficiently to allow this cart to slide under the tires. When the jack is lowered, the tires rest upon the carrier and can be pulled off and moved with little effort.

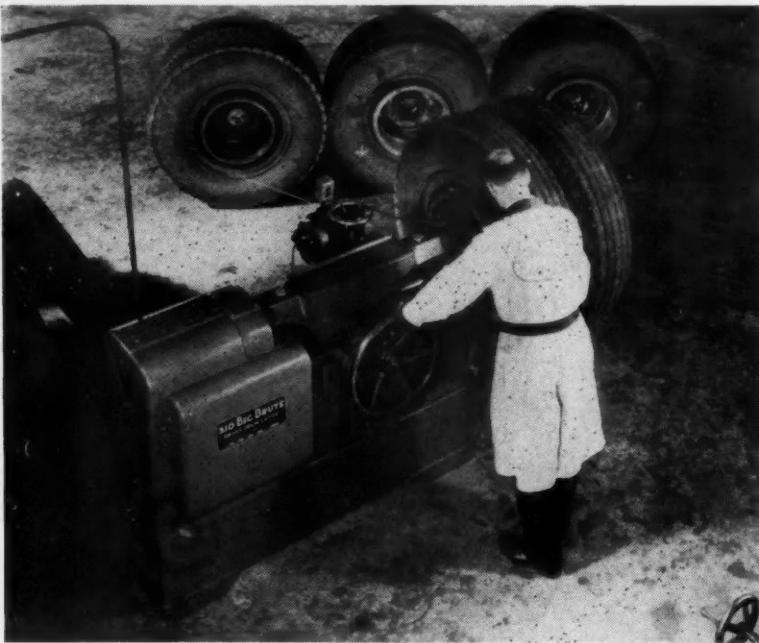


Press Is Used to Preload Differential

From Weigle Bros., Philadelphia, Pa.

To preload a differential pinion, first install all pinion shaft parts, including pinion shaft oil seal. Then place a spacer block on a press bed to hold the rear of the differential housing off the press bed $1\frac{1}{2}$ in. Next, place the differential unit on the press bed with the spacer block centered under the pinion gear. Place a heavy bushing around the top of the pinion shaft and press down the universal flange to collapse the pinion shaft sleeve. Take care not to go down all the way as the final preload adjustment is to be made with the pinion shaft nut. While pressing down on the shaft, work the rear housing up and down by hand to insure that adjustment is not too tight.





Perfect lining-to-drum contact requires (1) a large lathe, (2) complete assembly mounted so as to eliminate possible distortion, and (3) careful control during the grinding operation

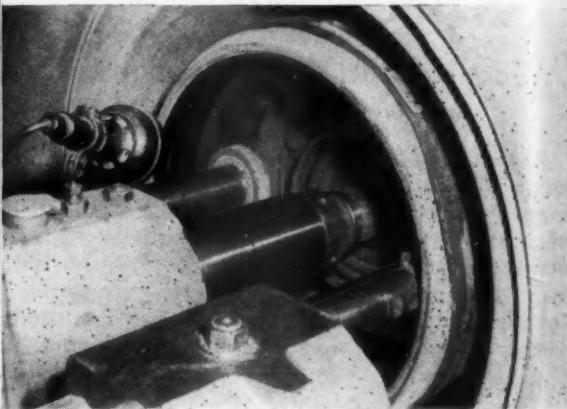


Fig. 5. This
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PRECISION WORK—

Key to Better Brake Dr

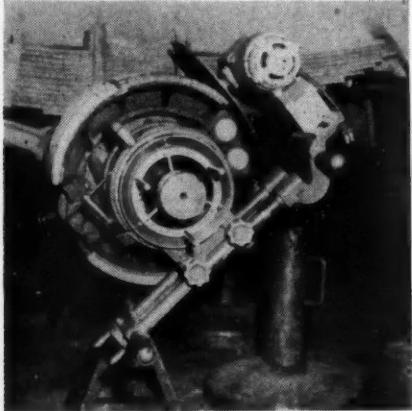


Fig. 4. Use of the circle grinder guarantees good drum to lining contact at all points around the drum

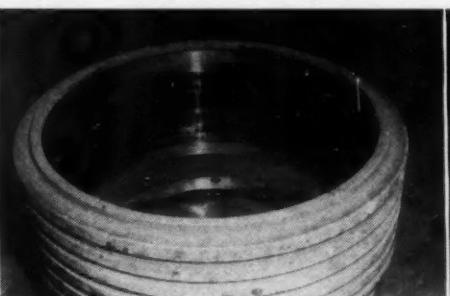
Fig. 1. The heat checks in this drum make it susceptible to failure — even bursting—when the brakes are applied

It's simply a matter of selecting the proper drum and lining to meet service requirements; then machining the drums to proper dimension and finish. Here's how . . .

By O. E. (Johnny) Johnson, Vice President
Brake and Electric Sales Corp., Somerville, Mass.

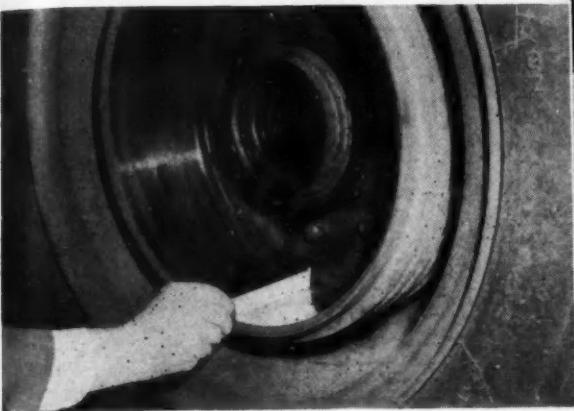
Fig. 2. A case of brake drum failure at 40,000 miles. Heat caused checking which shaved away the brake lining

Fig. 3. Crack resulted from improper lining selection. Its high coefficient produced excessive temperatures



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Fig. 5. This drum has run 170,000 miles, was machined once in that time. Proper grinding methods and lining selection have eliminated the usual checking and bell mousing problems



Brake Drum Life

BALANCED BRAKES are obtained as a result of: (1) careful selection of replacement materials and components, (2) time tested and proven maintenance practices, (3) the use of proper and adequate tools.

Let us consider brake drums and their importance in balance.

If a manufacturer builds great strength and shock resistance into

a drum through the use of alloys we find that martensite (hard spots) are formed, as a result of high service temperatures and rapid cooling. This leads to heat checking. If a high carbon content is used, (which tends to control the heat checking problem in drums) the drum is weakened.

Brake Drum Types

Some plain type drums are susceptible to "bell mousing" as a result of mechanical pressures. Sometimes plain drums are banded to hold the cast iron together and to keep the drum from bursting. The centrifused drum has a steel shell insert in the cast drum and, to an extent, serves the same purpose. Resultant performance has not been too good and the cost involved is not justifiable.

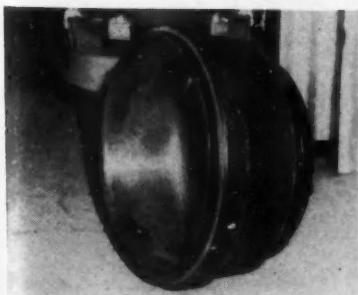
Plain type drums with heavy cast sections at the outer edge, such as this illustration, have been used with varying degrees of success.

This type of drum will resist bell mousing and wears fairly well. However, this design does not seem to allow for uniform drum expansion, nor does it seem to provide the heat dissipating qualities found in rib-type drums.

Considerable progress has been made in testing bi-metal drums. Aluminum bi-metal drums for instance, have been used successfully in racing cars. A copper and steel drum is now being used successfully in heavy trucking operations. In the case of the copper and steel combination, a steel adapter is required for the wheel, to which the barrel or actual drum is attached. Copper is fused to the steel drum to produce a bi-metal product. Copper fins are cast into the piece at the outer surface. A special, low coefficient friction brake liner is required. This copper and steel drum has good wearing qualities and good heat dissipating ability. The

(TURN TO PAGE 128, PLEASE)

Bell mousing can occur as a result of selecting the wrong drum for the particular job required of the brakes



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Cylinder Taper of Pick-up Truck Using Series 2 Oil

(Mileage = 13,500)

Cylinder Number	Top Diameter, in.	Center Diameter, in.	Bottom Diameter, in.	Taper, in.	Out-of-roundness, in.
1.....	3.5010	3.5015	3.5020	0.001	none
2.....	3.5010	3.5015	3.5020	0.001	none
3.....	3.5010	3.5015	3.5020	0.001	none
4.....	3.5010	3.5015	3.5020*	0.001*	0.001
5.....	3.5010	3.5015	3.5030**	0.002**	none
6.....	3.5015	3.5020	3.5030	0.015	none

* Measured perpendicular to wrist pin.

** Parallel to wrist pin.

Series 2 Oil Cuts Sludge in Stop-Start Operation



By G. A. Fogg, President
Truck Leasing Corp.

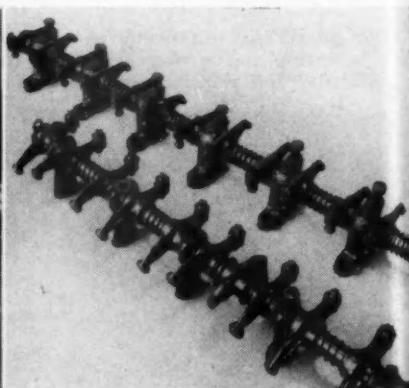
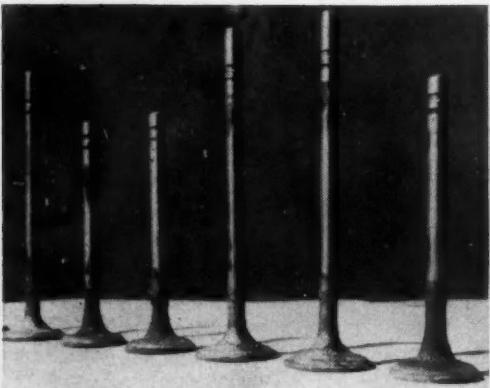
AMONG the larger fleet operators in the state of Maine, The Truck Leasing Corp. operates well over 150 cars and trucks of all sizes, models, and makes. Trucks are leased to such organizations as the Portland Gas Light Co., Cummings Brothers Wholesale Grocers, B. D. Stearns, Inc., and John Kern & Son.

Because of the many vehicles

leased by our company, it is absolutely imperative that we keep accurate and extensive records. In fact, our mechanics have jokingly remarked that Dick Hoster, our assistant general manager, keeps so many books that he can tell when one of his trucks backfires.

His main weapon is a control card which lists such data as mileage, gasoline used, insurance, repairs effected and their cost, and a very important item, oil consumption. Since our trucks do not have an oil filter, and also because they use a dry-type air cleaner, we make

Engine underside . . . valves . . . pistons . . . rocker arm assembly . . . oil pan . . . head . . . from engine torn down after



Sludge Cut

The principal cause of sludge would consist of as little as one-half of an engine's oil consumption. It would drop to zero if we could rule these factors out. Traceable causes are the wear which occurs in cold engines, particularly in the sludge problem.

Cold engines hardly notice

13,500 miles

it a practice to change the oil every 1000 miles. At other times we add oil as needed.

Some years ago, when we analyzed these records, we found that at least two, and sometimes three engine overhauls in less than 20,000 miles of driving were needed on our trucks. Maybe that's normal for pick-up trucks which see constant stop-and-go service the year round, but we thought it was too much.

erate "stop-and-go," or when idling time is very high. High idling time plus "door-to-door" driving means the trucks used by Portland Gas Light Co. run about as cold as any truck ever will. Our first thought, therefore, was to install hot (180 deg F) thermostats, hoping in this way to eliminate or at least lessen the sludge formation. We tried it on 12 trucks. Unfortunately it did not help.

We had heard about a special

as his personal means of transportation, until it registered 300 miles. Additional pick-ups were treated in exactly the same way, using only the special oil, and breaking them in slowly for their first 300 miles. Within seven months we had replaced older equipment with eleven new trucks, all "weaned" on this superdetergent type oil.

Test Teardown

The engine of one of these trucks was taken apart and overhauled after 35,000 miles. Merely as a check on our findings, and to be sure that we really could leave the engines alone much longer than we used to, we recently took a second one apart, after only 13,500 miles. What we found convinced us that the job had been totally unnecessary.

All vital parts of the engine—rocker arms, pistons, valves, oil pan and jets—were devoid of sludge. Piston rings were free, and hardly worn. In fact, on some of the rings the original tool marks were still clearly visible. The holes near the tops of pistons, which we normally expect to clean out with a drill or stiff wire, were open and needed no attention. The oil screen, after a quick going-over with compressed air, had a small blob of sludge on it, no larger than half a peanut, and easily wiped off. Formerly it used to take us one hour to unsludge a screen.

Another surprise came when we miked the various cylinders to check for engine wear. We expected at least .005 in. taper in each cylinder, considering the mileage on the truck. Chart on facing page shows what we actually found.

(TURN TO PAGE 124, PLEASE)

Sludge Caused Trouble

The primary reason for the frequent overhaul was that trucks would consume too much oil after as little as 5000 miles, and that the engine's power and performance would drop off noticeably. As a rule these two factors were directly traceable to stuck rings, clogged breathers, and excessive cylinder wear which, in turn, were due to cold engine sludging. Get rid of the sludge, we thought, and the problem is solved.

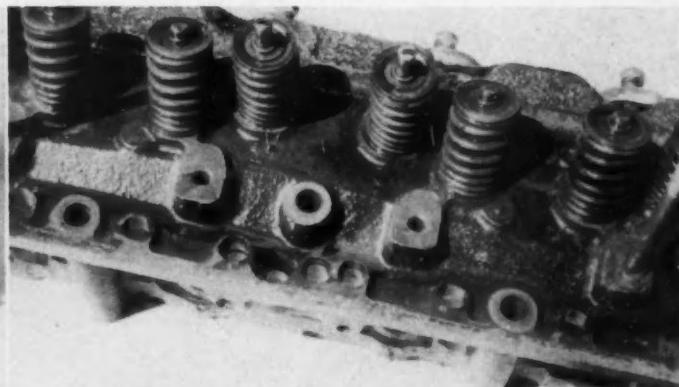
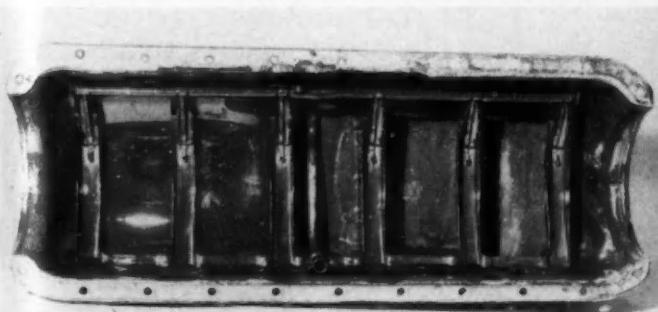
Cold engine sludging is particularly noticeable when trucks op-

high-detergency oil, which was claimed to have unusual sludging resistance. Since we were, at that time, replacing some of our equipment, we decided to try out this oil to see if it really would solve our problem.

Series 2 Oil

In order to give the oil every possible chance to prove its worth, no other oil was used in the new trucks. In December, 1951, a Series 2 type oil was first used in a Chevrolet pick-up truck. Our general manager used this truck

13,500 miles of high idle, start-stop operation using Series 2 oil . . . show relative freedom from sludging condition



It saves loss in revenue resulting from equipment painting layups, extends life of trailers, reduces annual painting charges. In fact . . .

By Earl D. Radcliffe

Superintendent of Operations
Leaman Transportation Corp.
Downington, Pa.

NEOPRENE Cuts Acid-Tank Painting Costs by 85%

Completed center section has three coats of neoprene brushing cement with total film thickness about 30 mils. Coating, estimated to extend trailer life four years, is actually a sheet of chemical-resistant rubber bonded to metal



New trailers to assure . . .
is sandblast

NEOPRENE coatings applied more than two years ago on the dome and center sheet area of acid tank-trucks operated by Chemical Tank Lines, Inc. (a Leaman affiliate), have already outlasted the best acid-resistant paints more than 12 times, reducing paint maintenance cost something like 85 per cent to date.

Moreover, the coatings, which have been in service 27 months, are still intact. Except for a slight touching up, no further work has been required.

Few services can match the corrosive conditions encountered in the "splash" area of an acid tanker. The 64 tankers in Chemical Tank Lines' fleet transport all kinds of acids—concentrated sulfuric, nitric, muriatic, phosphoric, oleum, and various spent acids—as well as caustic soda, aluminum chloride, and other salt solutions.

They range all over the country, meeting every extreme of climate and atmosphere. In addition to attack by spilled chemicals and corrosive atmospheres around chemical and industrial plants, the paint is variously subjected to sand storms, hail, rain, blazing sun in the south and 40-deg below zero temperatures on winter runs north.

With this kind of abuse, the best so-called "acid-resistant" paint lasted only about two months. Trucks were being repainted on

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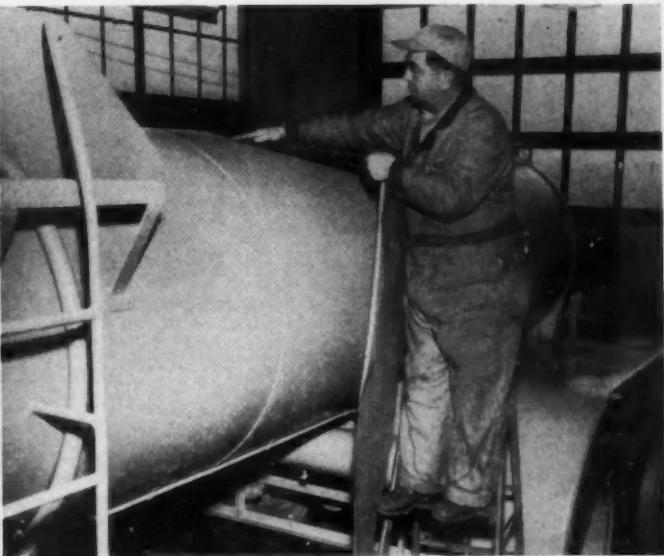
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New trailers are simply wire-brushed and solvent-wiped to assure firm metal-to-coating bond. Older equipment is sandblasted to remove paint and clean off corrosion



Trailer is first primed and spray-painted with two coats of neoprene maintenance paint. Center section—"splash area"—is then masked-off for thicker neoprene coating

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the average of six times a year. There were a number of instances where acid accidentally spilled down the sides only a day or two after the truck had been painted, which meant the whole job had to be done over again.

Two-Year Paint Life

Compared with the paint previously used, it costs almost twice as much for materials to coat a truck with neoprene—say, \$90 against \$50, in round numbers. Labor cost is about the same; coating a truck is a one-day job for one man. Material cost is

higher partly because neoprene costs about 30 per cent more per gallon, but mostly because the final neoprene film is three to four times thicker than most paints.

More Revenue Use

Assuming a two-year life for neoprene against two months for paint, even at twice the cost in materials, the net result is that annual materials cost for painting has been cut to one-sixth of the former figure, and annual labor cost is only one-twelfth as high.

While painting costs were sig-

nificant enough, the real saving lay in another direction. When the tankers are brought in for painting, they lose about \$100 in revenue during the layup. This could mean a loss of around \$38,000 a year on the line's 64 acid carriers. Again assuming a life of two years for neoprene—and the first application is still going strong after 27 months—revenue loss can be reduced from \$600 per truck annually to only \$50—a cut of slightly over 91 per cent.

The third saving is in tank life. Since the tanks are always haul-

(TURN TO PAGE 120, PLEASE)

"Splash area" is first primed (below), then painted with three coats of neoprene brushing cement to which is added a vulcanizer accelerator to obtain thicker coating

Neoprene brushing cement is flowed-on like enamel. It should not be brushed out as excessive scrubbing will make coating uneven, may cause air bubbles and pinholes



New Products

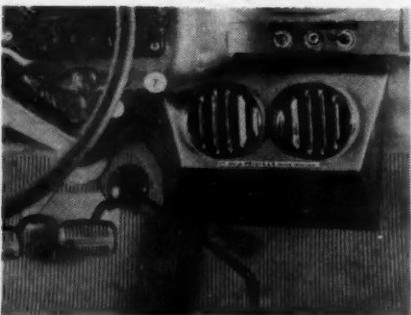
The latest developments in parts, accessories, tools and equipment for the fleet field, described in brief for your convenience

P1. Vehicle Washer

State Sales Co. is producing a vehicle washer especially useful in multi-stop delivery fleets. The "Andrews" washer first wets car thoroughly from 20 strong jet sprays that move up and down in a sweeping action, then sprays detergent in a like manner. After mitting, car is given clear rinse by jet sprays and dried. An air hose attachment is used to knock off water beads on body and chrome, channels and crevices. The unit suspends from ceiling on chains, has water gun and mitt on each side for single operator's convenience or allows 2 men to a vehicle during rush periods.

P2. Air Conditioner

Frigikar Corp. has announced a new air conditioning unit. The model for truck cabs is called "Frigikab" and for passenger cars, "Frigiking." Both models have under-dash housings that contain the evaporator, blower-fan, thermostat, and air-direction louvers, automatically hold in-car or in-cab temperatures in the 70-degree comfort zone. Up to 365 cubic feet of refrigerated air per minute are delivered at low or high speeds.



P3. Voltage Regulator

Ideal Corp. has announced a new voltage regulator. Features include tungsten contact points paired with points of precious metals, temperature-compensated, leaf-type springs and a solid steel base. The line contains 10 regulators that are said to cover 98 per cent of all 6-volt applications.

P4. Space Heater

Clayton Mfg. Co. has announced a portable, oil fired, high velocity hot air heater. With an hourly output of 300,000 btu; it is available with either electric drive for plug-in to any 110 volt, 60 cycle outlet, or with a completely self-contained gasoline engine. The "Salamander" provides quick heat for storage yards, loading platforms, docks, open sheds, open and semi-enclosed automotive storage spaces. Used to preheat trucks and other powered equipment in cold weather, it cuts down the starting time to get vehicle rolling. Heated air output is 2400 cu ft per minute. Fuel consumption is 2.15 gal per hr utilizing No. 1 or 2 fuel oil or kerosene. Fuel tank capacity of 18 gal allows 7 to 8 hours of operation.

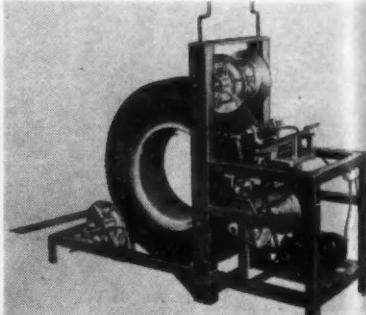


P5. Wiring Boots

Signal-Stat Corp. has announced "Sigwire Boots." They are made of rubber and especially designed to cover and protect "under-the-fender" signal lamp fittings and wire against weather deterioration and corrosion. Short-circuits caused by the ravages of weather, mud, road tars and oils are protected against by the assembly. Corrosion of lamp nuts, bolts and washers below the vehicle is prevented. They fit all Signal-Stat double-face and single-face lamps. They can also be used to protect almost all other makes of bolt-type lamps.

P6. Tire Regroover

Ballek and Co. has announced a tire regroover that allows cutting up to six grooves in one operation. All adjustments are made from one side. Grooving is accomplished by rotating tire upward, permitting an unobstructed view of tire tread. Cutting head is mounted on a floating slide which automatically follows unevenly worn spots. Head also can be pivoted to one side or the other where tire is worn on one side.



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P7. Generator

Electric Auto-Lite Co. has announced a new, high-output Auto-Lite generator especially designed for police cars, taxicabs and other vehicles using two-way radios. Under normal operating temperatures, it has a maximum output of 50 amp. In cold weather, a maximum output in excess of 60 amp is automatically allowed by using the generator with a new Auto-Lite regulator with a temperature-compensated current limiting regulator unit. The generators are available with two sizes of pulleys.

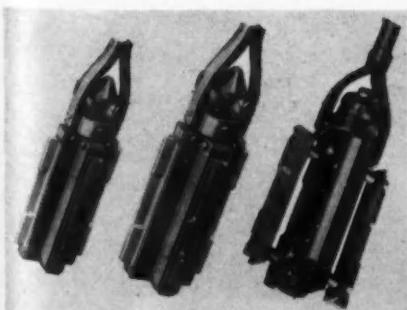


P8. Impact Tool

Ingersoll-Rand has developed a rotary, electric, impact tool. Known as the Size No. 5U, the tool has a $\frac{1}{2}$ -in. drive and weighs $6\frac{1}{4}$ lb. It is designed for engine nuts and bolts within its rated capacity; can be used for such difficult work as universal joint and angle head jobs, rocker arms, upper control arm replacements, etc. With standard attachments, it will drill, drive screws, ream, tap, do wire brushing, hole sawing, etc. It has a renewable, synthetic rubber bumper which snaps onto the front of the tool housing.

P9. Cylinder Hones

Sunnen Products Co. has added a small cylinder hone to its line, giving the company a line of portable hones ranging from $1\frac{1}{4}$ to $14\frac{1}{2}$ in. The hones can be used either horizontally or vertically, and the power is applied through a free floating universal joint. Power can therefore be applied at an angle and it is claimed that machinery and engines need not be dismantled for maintenance and repair. Individual hones and their ranges are: SN-70— $1\frac{1}{4}$ to 2.0 in., JN-90—2.0 to 2.6 in., AN-110— $2\frac{1}{2}$ to 7 in., AN-812— $4\frac{1}{4}$ to $14\frac{1}{2}$ in. (not illustrated).

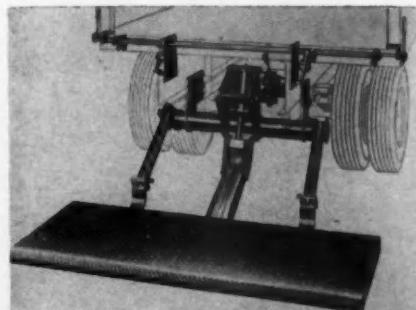


P10. Tire Traction Plates

The Tractioneer Co. has announced production of tire traction plates designed for dual wheels. They are spring steel plates which flex with the tires. The traction assembly is designed to bring trucks through snow, ice, or mud safely. A boss-spacer replaces the ordinary spacer on spoke hubs between dual wheel mountings. Once in place, this fixture engages the bolts for securing the "Trac-Plates" to the tire treads. These spring steel plates with cleats are drawn down into locked position on the tire treads as the bolts are tightened. For Budd or disc wheels an adapter is available.

P11. Elevating Tail Gate

Gar Wood Industries has announced an elevating tail gate designed for installation on the rear of a $1\frac{1}{2}$ -ton or larger truck, or semi-trailer, and lifts or lowers loads up to 2000 lb. All operations are hydraulically actuated by single lever controls. One valve controls all movements. A single, double-acting cylinder powers all operations. Control valve stops and holds the platform at any height. A "dead-man" feature prevents platform movement when the end-gate is unattended. An overload valve prevents raising or lowering the platform when overloaded, and a safety valve prevents closing the End-Gate when the platform is loaded.



P12. Nylon Tarpaulins

E. I. duPont deNemours & Co., Wilmington, Del., have announced neoprene-coated, nylon tarpaulins. They weigh $\frac{1}{2}$ to $1\frac{1}{3}$ as much as regular tarps, are reported to have five times the tear strength. They are waterproof, will not shrink or stiffen when cold or wet, are rot and mildew resistant, have good resistance to such chemicals as gasoline and oil, can be repaired like an inner tube puncture.

P13. Hand Tools

Verituff Tool Co. has announced manufacture of a line of mechanic's hand tools featuring body and fender repair tools. The line consists of 65 various body hammers, 25 assorted dolly blocks, 20 spoons, ball peen hammers, etc.

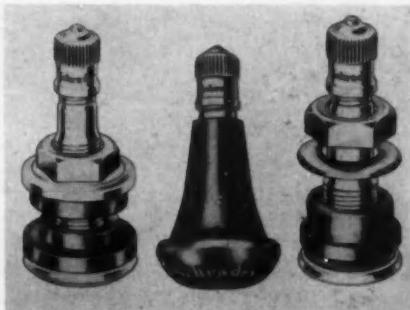
P14. Reefer Floor Racks

Louisville Metal Products Co. are producing all-aluminum vent floor racks and side rails for refrigerated trucks. They are designed and manufactured in aluminum to cut down on dead weight and heat loss by a considerable amount. These new aluminum vent floor racks and side rails have recently come thru government tests with flying colors. They are rugged, rot proof and light weight.

P15. Tubeless Tire Valves

A. Schrader's Son has made available three replacement valves to replace damaged tubeless tire valves that match the current original equipment type. Special large rubber washers permit attachment to rims with round or oval shaped rim holes. The rubber-covered, snap-in type replacement valve is designed to form an airtight seal in $\frac{1}{4}$ -in. round rim holes in car wheels.

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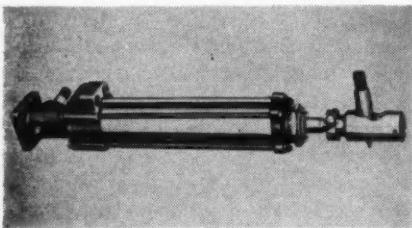


New Product Descriptions

Continued from Page 85

P16. Power Steering Unit

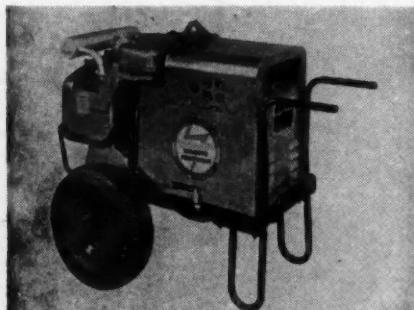
Vickers, Incorporated, has designed a new hydraulic power steering for trucks and buses and other heavy duty uses. Compactness has been achieved in the new model as a result of a new servo control valve design and relocated hydraulic connections. Designated as the Series No. S23, the booster is available



either with or without relief valve, and can be either factory installed or mounted on vehicles in service. It can be mounted interchangeably with the Vickers S6-270 Series steering boosters, yet has a longer stroke. Without relief valve, it can be used with Vickers VT16 or VT17 power steering pumps which have integral volume control and relief valves.

P17. Power Plant/Welder

Marquette Mfg. Co. has introduced a gasoline-driven AC welder and power plant combination called the "Porto-Arc." Featuring an easy-starting Onan engine, it gives up to 200 amps of welding current plus a power source of 4½ kw at 110-220 volts for operation of heavy duty power tools or lighting circuits. In addition to improved are stability given by the 100 cycle AC power, it delivers 1000 watts DC even while welding. Optional equipment includes a running gear, road trailer, ready-pull starter, and canvas cover.



P18. Hydraulic Hoist

The Galion Allsteel Body Co. has announced an hydraulic hoist designed for installation on ½-, ¾- and 1-ton trucks. Known as Model No. 334N, the new hoist can be mounted under any pick-up body, as well as any platform body up to 9 ft in length or light duty Galion Allsteel dump body up to 8 ft long. Rated capacity of the hoist is up to 4 ton.

P32. Con Rod Aligner

Ammco Tools, Inc., is now producing a new Model No. 3300 connecting rod aligner designed to handle rods for passenger cars, light and medium trucks and tractors as well as most heavy trucks, tractors, and diesels. Its design allows the handling of rods with or without the piston assembled and with or without the cap.

P19. Battery Chargers

Peer, Inc., has introduced a new line of battery chargers designed to cut power consumption and eliminate charging bulbs, and their replacement, through the use of selenium rectifiers. Rectifiers are forced air-cooled. Four models are available including the S-33 6-12 volt quick charger, illustrated, an 80 amp, fully portable model weighing only 35 lb.



P20. Surface Grinder

Peterson Welding Laboratories has announced three new models of surface grinders. Model No. 42-D has an 11-in. grinding wheel and 21 x 42-in. table top; Model No. 50-D has a 14-in. wheel with 24 x 50-in. table top; Model No. 72-D has a 14-in. wheel and a 27 x 72-in. table top. They all feature a dust collector unit said to spin out 80 per cent of heavy dust, catch the balance in a new type filter. New lap grind action is said to eliminate hollow grinding, loading up and polishing of stone.

P21. Shop Exhaust System

Moffat Products has announced a shop exhaust system. Termed "O-Dor-Vent," the system, permanently mounted on the garage door, is easily attached to the tail pipe of a vehicle for channeling toxic exhaust fumes to the outside. The system's design keeps the unit off the floor to prevent damage in use or in storage. Aluminum is used throughout. When the unit is not in use, simple spring clips, mounted on the garage door, provide quick storage and prevent the unit from being run over by vehicles or walked on. Automatic valve is permanently mounted in a door of any thickness.

P22. Steam Cleaner

Malsbary Mfg. Co. has announced an improved version of its Model No. 250 high pressure combination cleaner. It produces pressures up to 300 psi—20 per cent greater than its predecessor, and delivers 20 to 33 1/3 per cent more solution through its larger ¾-in. ID coils. The new Model No. 250 uses a pump for pressure instead of steam, enables the user to get 300 lb pressure without lighting the burner. Two valves on the control panel enable the operator to shift instantly to any one of the five cleaning actions. It burns any fuel from kerosene to heavy diesel oil.

(TURN TO PAGE 158, PLEASE)



COMMERCIAL CAR JOURNAL, January, 1955

Quick Seating



CHROME TOP RING

Factory-lapped to a light-light finish for quick seating and fast break-in, with a heavy solid chrome face applied by Sealed Power's exclusive process. Fights heat, friction, abrasion, and corrosion.

CHROME SIDE RAILS

More than double usual life is given to the side rails of the steel oil ring by solid chrome faces, giving top-and-bottom protection to the whole set.

FULL-FLOW SPRING

Every KromeX Ring Set includes the famous MD-50 Steel Oil Ring with the Full-Flow Spring—best for oil control even in badly tapered and out-of-round bores.

FAST BREAK-IN

Millions of road miles of use have proved that Sealed Power KromeX Ring Sets break-in fast, go to work saving oil in an amazingly short time.



an important plus-value in **Sealed Power KromeX** **PISTON RING SETS**

Don't let anybody deceive you about chrome rings. Sealed Power KromeX Ring Sets break in as fast as plain cast iron rings, because of Sealed Power's exclusive factory-lapping process, equal to hundreds of miles of actual wear. This quick-seating means immediate oil control—and amazing oil economy from the start.

And remember—in Sealed Power KromeX Ring Sets, *both* the top compression ring and the side rails of the MD-50 Steel Oil Ring are chrome faced. This gives the long-wearing protection of chrome at the top and bottom of each set, which accordingly increases the life of the rings between.

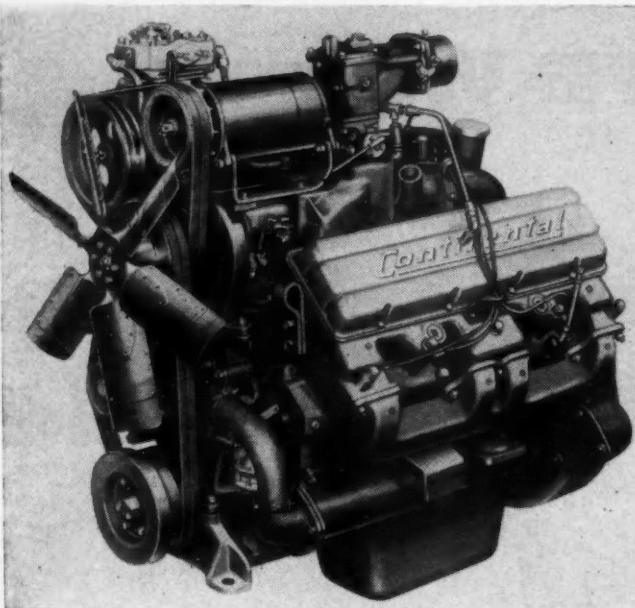
28 leading engine builders use Sealed Power chrome rings!

Sealed Power Piston Rings

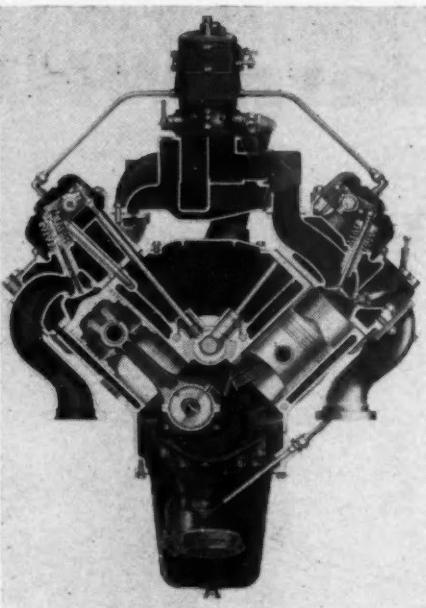
BEST IN NEW TRUCKS! BEST IN OLD TRUCKS!

SEALED POWER CORPORATION, MUSKEGON, MICHIGAN

RINGS • PISTONS • PINS • SLEEVES • VALVES • WATER PUMPS



Left, three-quarter view of the gasoline version, No. V8603, shows the location of such accessories as generator, carburetor, governor and fuel pump



Cross-section of same engine shows short strokes design, location of valving and water jacket system. Note: Tappets are accessible without removing pan

CONTINENTAL Offers V-8 Line in Gas and Diesel

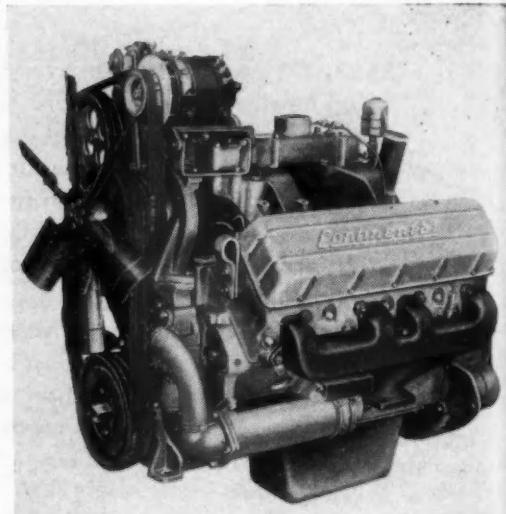
**A 240-hp gasoline and 182-hp diesel
now available in a 90-deg. V-8 design**

CONTINENTAL Motors Corp. has launched a family of heavy-duty, short stroke, V-8 engines of compact design.

The automotive line includes: the V8603, a 240-hp gasoline model, and the VD8603 "Cushioned Power" diesel, rated 182 hp. The description that follows applies to the V8603 gasoline transportation engine.

The VD8603 diesel engine has the same mounting dimensions and approximately the same space requirements. While many of the major components, such as the cylinder block, crankshaft, bearing caps, etc., are interchangeable, the diesel version involves some natural differences. For example, the cylinder heads are different, feature the Continental "Cushioned Power" combustion

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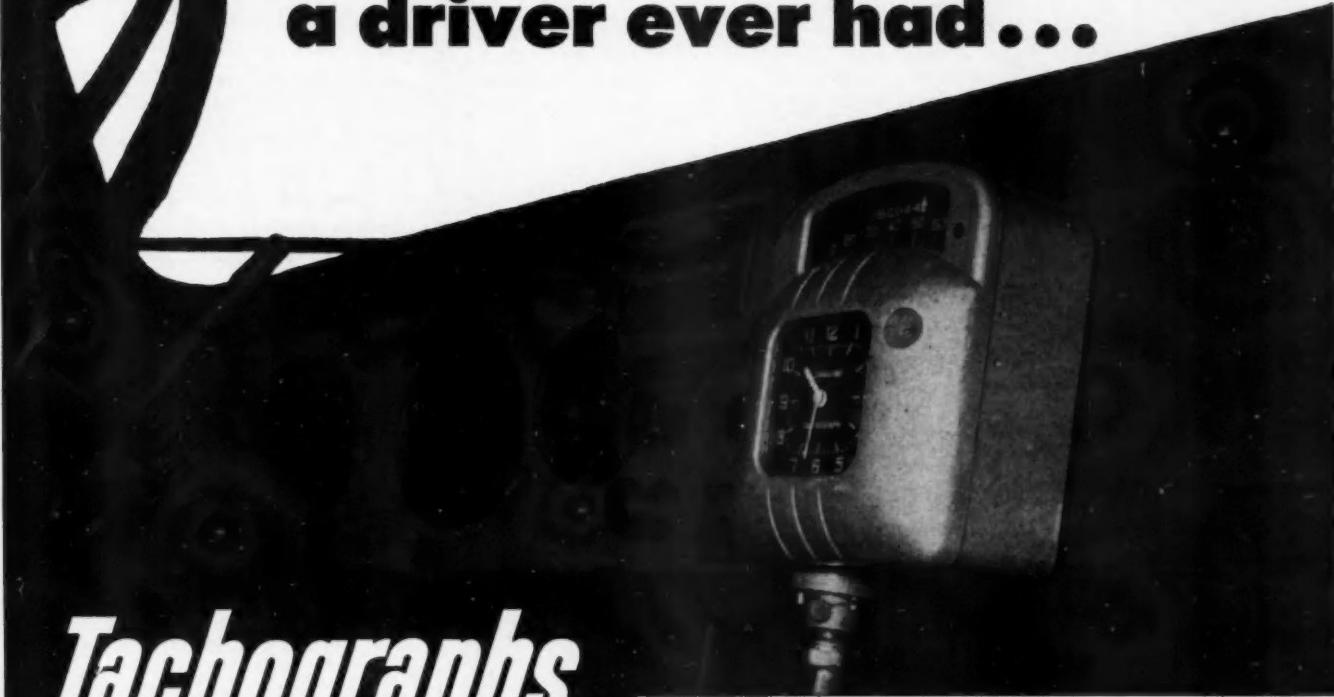


The diesel model, No. VD8603, has same mounting dimensions and space requirements. Block, crankshaft, bearing caps are interchangeable

Condensed Specifications

Model	V-8603 (gasoline)	VD-8603 (Diesel)
Bore (in.)	4 3/8	4 3/8
Stroke (in.)	4 1/4	4 1/4
Displacement (cu in.)	803	803
Compression Ratio (gasoline)	7 to 1	.....
Bhp, bare (max.)	240 @ 3200 rpm, gov.	182 @ 2800 rpm
Torque (lb ft max.)	500 @ 1400 rpm	500 @ 1400 rpm
No. main bearings	5	5
Bhp/cu in. Ratio	0.398	0.302
Weight (lb) approx.	1612	.....

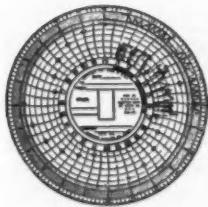
**the "BEST FRIEND"
a driver ever had...**



Tachographs

are essential for accurate
recording of vital trip information resulting in
GREATER SAFETY, PERFORMANCE and ECONOMY!

Each day, or before every run, a wax-coated chart is inserted inside the durable aluminum case. Graphically recorded on this chart is vital information such as:



- When engine started
- How long it idled
- When vehicle was in motion
- How fast it traveled
- When vehicle stopped
- Distance traveled between stops

You, your drivers, and customer's cargo benefit from the *proven* advantages TACHOGRAPHES provide in protecting your entire fleet operation. Daily, thousands of fleet operators depend on the valuable trip information TACHOGRAPHES accurately record. It is the *best* way

of fostering safer driving, increasing over-all performance and adding greater economies to operations.

TACHOGRAPHES are easily mounted and positioned on the dash and connect directly to the speedometer cable. They are available in two types: M.P.H. and R.P.M. All models have visual indicating dials showing time of day, speed and miles traveled, as well as an easily set red warning light which signals driver when a predetermined rate of speed is exceeded.

TACHOGRAPHES will prove to be the wisest investment you can make for improving your over-all fleet operation. Learn for yourself the many *proven* advantages you may gain... send today for your copy of Wagner Bulletin SU-3 which gives full details and data. There is no cost or obligation of course. A coupon is provided below for your convenience.



Wagner Electric Corporation

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Name and Position _____

Company _____

Address _____

City _____ State _____

We operate _____ Vehicles _____

(NUMBER)

LOCKHEED HYDRAULIC BRAKE PARTS and FLUID • NeRoL • CoMoX BRAKE LINING • AIR BRAKES • TACHOGRAFS • ELECTRIC MOTORS • TRANSFORMERS • INDUSTRIAL CRANE BRIDGE BRAKES

Continental Offers V-8 Line

Continued from Page 90

chamber arrangement. Together with the diesel fuel injection system, there is a different intake manifold; different piston, etc.

The basic V8603 gasoline engine, shown in transverse cross-section, is a 90-deg. V-8 with backbone consisting of a one-piece cylinder

block of high quality chrome-molybdenum alloy iron.

Engine Components

The cylinder head is of chrome molybdenum alloy iron. It has liberal water passages for good cooling around the valves, combustion

chamber, and exhaust passages. The head is fastened with long bolts, fitting in heavy bosses located away from the cylinder barrels to preclude distortion.

Pistons are of aluminum alloy, tin-plated, with expansion control, and have a thick domed head, as shown. The ring set-up consists of three compression rings, and one oil ring, the top ring being hard chrome plated. Full-floating piston pins, 1½ in. in diameter, are employed.

Connecting rods are drop-forged and heat treated, 8⅜ in. center-to-center, with steel-back replaceable bearings of copper-nickel matrix with high-lead base babbitt overlay.

Main bearings are of steel-back type with copper-nickel matrix, and high-lead base babbitt overlay. Thrust is taken on the flanged center bearing, no shims or washers being required to control end play.

The Valve System

Intake valves are of alloy steel with head diameter of 2 13/32 in. Exhaust valves are of austenitic steel, sodium-cooled, Stellite-faced, Bright Ray treated, and fitted with a positive rotation mechanism. Exhaust valves operate in valve seat inserts of alloy steel. Nested valve springs are employed to provide proper action.

The valve mechanism is actuated by hollow push rods, operating in mechanical barrel type tappets, the latter being readily removable from overhead without dropping the oil-pan or removing the camshaft. The five-bearing camshaft is drop-forged and heat treated, is fitted with replaceable steel-back precision bearings, babbitt-lined. Intake valve lift is 0.512 in., exhaust 0.505 in.

The gasoline induction system consists of a 1¾-in. duplex down-draft type carburetor, mounted on an amply water-jacketed intake manifold for controlling the temperature of the air-fuel mixture under all operating conditions. The fuel-air mixture enters the cylinders through individual, streamlined ports. Provision is made for a mechanical diaphragm type fuel pump, driven from the camshaft.



Every mechanic knows his hands take a beating no matter how careful he is. But the mechanics who like a full week's work and a full week's pay—standardize on Bonney and avoid injuries caused by inferior tools.

Bonney Tools are the cheapest insurance against unnecessary hand injuries!

Bonney Tools are real knuckle-savers—the easiest-handling, best-looking tools on the market today. They're lightweight, but strong...precision engineered to insure accurate, no-slip fit on those tricky jobs that can be so dangerous to men who work with tools.

Cheap tools are for chumps! Don't take unnecessary chances that can prevent you from collecting your pay-check. Use Bonney Tools!



BONNEY FORGE & TOOL WORKS, ALLENTEWON, PENNSYLVANIA

LOOK what these new **SHULER BRAKES** offer you!

READ the facts about the new Shuler Axle Company brakes, and you'll instantly realize that they are exactly what you have been looking for.

Top quality brakes with genuine malleable-iron brake shoes are obviously slightly heavier than lesser products. Remember, however, that when used with Shuler One-Piece Tubular Axles, the entire assembly actually weighs less than "competition".

HERE'S WHAT YOU GET IN SHULER BRAKES

- 1 New light-weight but permanent malleable brake shoes and spiders.
- 2 Brakes are bolted (not riveted) to axle flanges.
- 3 Roller shafts are fitted into the shoes with precision-machining, to insure full bearing, and are then locked in place. They can't fall out.
- 4 Positive locking "roll pins" in the anchor pins.
- 5 Parkerised and hardened cam rollers for rust-proofing and long service.
- 6 Nylon inner and outer cam-shaft bushings.
- 7 Self-aligning "ball-and-socket" aluminum cam-shaft housing.

NEW HEAVY-DUTY U-TYPE BRAKE DESIGNED ESPECIALLY FOR THE WEST COAST has all the above features plus longer anchor pins with double bearing surface, and larger-diameter cam rollers, for unusually severe service.

SHULER AXLE COMPANY, Incorporated, LOUISVILLE, KENTUCKY
SUBSIDIARY OF FULLER MANUFACTURING COMPANY
SALES OFFICES IN DETROIT, CHICAGO, OAKLAND AND TULSA
WEST COAST WAREHOUSE
Oakland, California

SOUTHWEST WAREHOUSE
Fort Worth, Texas

Plus THICKER, BETTER, REPLACEABLE LININGS THAT CAN'T PULL OFF

Inspection will show you why Shuler brake linings never pull off — they're bolted on! Other advantages:

- 1 Uniform brake-lining wear is insured by precision-machining of the brake-shoe contours.
- 2 Brake linings are full $\frac{3}{8}$ " thick, all around — not just at the center.
- 3 The malleable brake shoes are permanent. They do not distort as the linings wear down. When linings wear out, you just bolt on new linings.
- 4 Additional lining area is provided by covering the entire length of the brake shoe, and by plugging all 32 bolt holes with friction material, at the factory. Easy to do on replacements, too.

Shuler Axle Company
2960 Second Street, Louisville, Kentucky
Gentlemen:

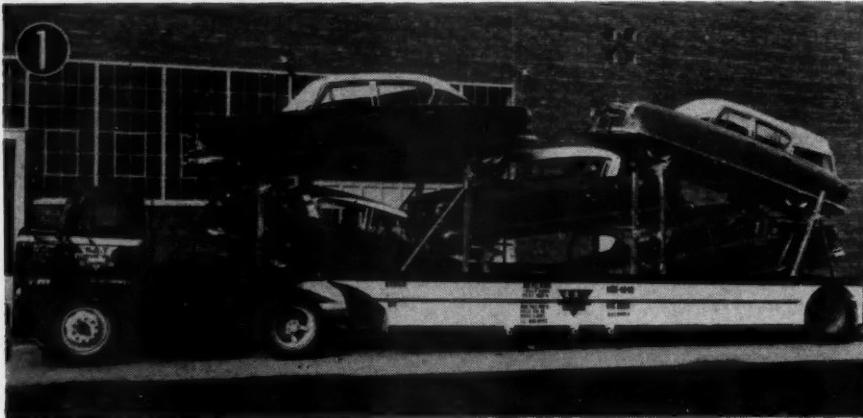
Without obligation, please send me a brochure on the new Shuler Brakes and Shuler One-Piece Trailer Axles.

Name _____

Firm _____

Address _____

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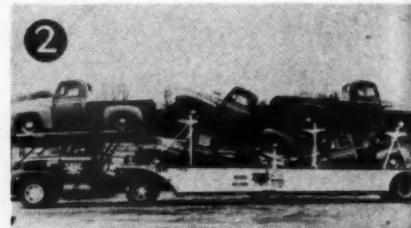


Five-Car Auto Transport Is Flatbed for Return Load

KENOSHA Auto Transport Corp., Kenosha, Wis., holds a patent on this versatile auto transport trailer. It will haul five cars on the trailer, can be switched to haul four units on the trailer and one atop the tractor cab, and can be converted to a flatbed trailer for return loads.

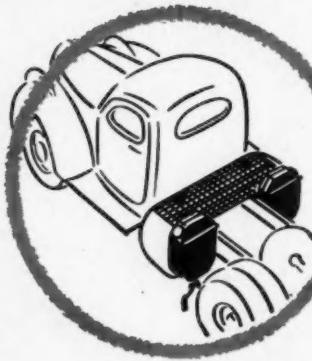
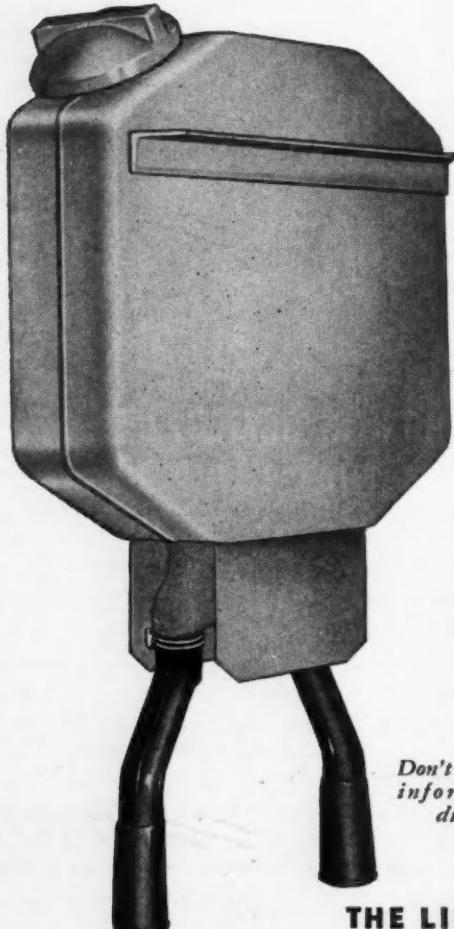
It is designed to stay within overall limits of 45 ft in length, 13½ ft in height and 8 ft in width. Payload capacity is 12 tons.

Fig. 1 shows the trailer loaded for an eastern trip. Elimination of vehicle over tractor cab permits travel through Pennsylvania where load over tractor is forbidden. Relocation of hydraulic jacks, as shown in Fig. 2, permits hauling of five ½-ton pickup



when it's a LINTERN SANDER

you **STOP**



Thoroughly dependable on icy, slippery roads . . . many superior features —

1. Hand control or foot control operation
2. Patented, weatherproof, non-clogging nozzles
3. "Demoist" absorber on fill cap
4. Splash guard for operating mechanism
5. Simplified valve assembly
6. Operates on 20 psi — no drain on battery
7. Air or vacuum operated — as dependable as your brakes!

Don't delay — write us now for complete information and name of nearest distributor. Ask for Bulletin 5307.

THE LINTERN CORPORATION
ROUTE 20, EAST • PAINESVILLE, OHIO

Sanders, Cylinder Tanks, Saddle Tanks, Step Tanks

a few dollars for **LINTERN SANDERS**
can save you hundreds of dollars

trucks to western points with one truck carried on top the tractor cab. Return loads use the trailer as a flatbed.

It is the trailer's capacity for stacking cars at an angle that make it possible to carry five vehicles within the legal limits. The cars are supported on adjustable hydraulic jacks that can be attached anywhere along the trailer's sides.

Return loads include street sweepers, machinery and other crated freight, racing cars, military vehicles and the like. Kenosha sometimes has to lease the combination to a carrier with the necessary ICC rights for the return load but says, "All of these return trips are very valuable and keep our loaded miles rates at a very satisfactory level."

DEAD PAN DAN, OUR CITY DISPATCHER, SAYS NOWADAYS A LOT OF GIRLS WILL GRAB AT A STRAW—ESPECIALLY IF ONE END IS IN A HIGH-BALL.

sport
Load

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TY DIS-
LOT OF
STRAW—
A HIGH-

ury, 1955

Protects batteries against vibration damage!



U. S. Peerless MICROPOOROUS Rubber Separators!



Write to address below for free copy of informative booklet on the high-performance, low-upkeep U.S. Peerless Rubber Battery Separators.

The automotive battery takes a lot of vibration and jarring, causing the plates to damage the ordinary battery separator—resulting in shorts and battery failure. But this doesn't happen when the separators are U. S. Peerless. These rugged separators stand up under vibration, give longer service than any other separator. They are known as battery savers.

U. S. Peerless has other big advantages: it cannot be harmed

by battery acid, heat or plate pressures—will not get mushy or soft in service. High mechanical strength prevents cutting by warped plates or loose plate material. Peerless even *outlasts* the plates. It assures more economical operating costs. In cold weather, it gives 20% faster cranking speed, 10% more power. *Protect your battery investment* by making sure your batteries have Peerless Rubber Separators.

UNITED STATES RUBBER COMPANY

Electrical Wire and Cable Department • Rockefeller Center, New York 20, N. Y.

COMMERCIAL CAR JOURNAL, January, 1955



1954 New Truck Registrations by Makes by States*

STATE AND MONTH	Auto-car	Brock-way	Chevrolet	Diamond T	Dodge	Ford	G.M.C.	International	Mack	Reo	Stude-baker	White	Willys	All Others	Total
Alabama.....	Oct. 1	1,066	4	164	801	219	351	10	3	11	32	7	2,669	
10 Mos. 5	5,740	13	875	4,597	1,107	1,113	66	10	77	163	93	13	13,873		
Arizona.....	Oct. 208	1	60	209	54	31	2	1	3	2	28	7	606		
10 Mos. 4	1,961	13	467	1,941	559	458	15	15	52	39	183	46	5,853		
Arkansas.....	Oct. 708	3	97	660	185	300	3	23	29	12	.....	2,020		
10 Mos. 1	5,387	23	676	4,939	1,439	1,018	18	8	143	63	93	3	13,831		
California.....	Oct. 19	2,104	21	503	1,731	601	21	10	51	95	300	153	6,136		
10 Mos. 74	3	19,155	182	4,498	17,673	5,083	178	101	639	427	1,502	672	53,896		
Colorado.....	Oct. 417	2	65	298	101	118	4	7	11	13	113	28	1,179		
Connecticut.....	Oct. 11	3,068	13	578	2,494	849	44	32	105	50	534	97	8,729		
10 Mos. 3	4	220	4	66	180	52	107	14	6	11	25	23	731		
Delaware.....	Oct. 49	25	1,944	35	519	1,693	505	777	140	47	104	95	137	8,199	
10 Mos. 1	74	9	52	19	35	5	20	10	.....	21	21	12	205	
District of Columbia.....	Oct. 3	8	791	3	142	204	225	36	2	20	21	1	4	2,054	
10 Mos. 1	586	14	133	522	135	158	8	8	7	36	27	31	1,666		
Florida.....	Oct. 646	4	112	625	182	194	33	8	11	20	81	9	1,928		
10 Mos. 6	5,628	55	1,092	6,269	1,535	1,453	266	77	241	278	689	84	17,573		
Georgia.....	Oct. 572	1	90	536	123	180	6	1	10	42	21	11	3,156		
10 Mos. 7	5	7,738	23	1,494	7,560	1,846	2,092	124	52	382	198	189	23	21,733	
Idaho.....	Oct. 140	1	54	114	55	72	1	1	4	1	43	1	486		
10 Mos. 1	1,580	7	402	1,374	617	569	34	5	74	16	278	33	4,980		
Illinois.....	Oct. 2	998	17	206	639	174	428	10	4	14	20	48	13	2,773	
10 Mos. 21	11,208	347	2,223	9,902	2,145	4,334	119	78	409	359	380	206	31,731		
Indiana.....	Oct. 659	5	181	671	94	274	6	1	23	42	21	8	1,985		
10 Mos. 26	6,974	78	1,513	6,934	1,261	2,051	60	55	424	475	180	114	20,945		
Iowa.....	Oct. 443	2	109	464	69	267	3	1	9	8	17	2	1,394		
10 Mos. 2	5,474	69	948	5,264	845	2,234	30	13	202	82	99	43	15,305		
Kansas.....	Oct. 493	3	88	469	114	172	1	1	11	8	36	3	1,399		
10 Mos. 1	5,311	31	694	4,874	1,245	1,516	11	10	210	67	168	8	14,146		
Kentucky.....	Oct. 454	2	73	405	101	148	5	1	13	5	22	2	1,231		
10 Mos. 2	5,041	31	723	4,435	1,113	1,127	40	32	129	100	218	60	13,051		
Louisiana.....	Oct. 659	9	93	643	125	249	9	6	26	10	17	5	1,851		
10 Mos. 1	6,152	35	906	5,750	1,289	1,399	55	11	231	82	175	25	16,111		
Maine.....	Oct. 167	1	24	139	26	44	14	4	9	25	5	5	459		
10 Mos. 2	1,405	14	280	1,338	393	376	80	7	71	195	22	4,258			
Maryland.....	Oct. 2	230	58	173	25	79	2	8	4	22	7	6	616		
10 Mos. 13	25	2,720	16	1,023	2,544	576	795	108	34	99	104	49	8,166		
Massachusetts.....	Oct. 6	315	9	80	405	67	157	43	22	9	38	14	1,228		
10 Mos. 82	54	3,118	55	935	3,792	708	964	237	126	165	277	288	136	10,935	
Michigan.....	Oct. 626	9	205	850	183	221	1	6	10	17	58	30	2,417		
10 Mos. 30	10,394	106	2,266	11,438	2,137	1,771	91	97	198	225	337	264	29,374		
Minnesota.....	Oct. 471	70	408	60	170	5	3	11	5	36	13	1,254			
10 Mos. 1	5,130	44	917	5,043	1,135	2,070	51	39	188	98	198	105	15,019		
Pennsylvania.....	Oct. 1,103	109	763	167	359	4	24	3	21	5	253	1,553			
10 Mos. 6,276	1	641	5,138	1,349	1,318	25	6	8	13	27	32	1	14,998		
Missouri.....	Oct. 800	2	99	607	125	257	6	8	13	27	32	1	1,977		
10 Mos. 1	7,847	44	1,158	6,457	1,863	1,948	67	36	226	237	179	43	20,103		
Montana.....	Oct. 162	1	41	138	47	159	1	1	8	3	42	2	595		
10 Mos. 4	1,896	8	375	1,796	615	841	35	10	125	20	393	25	6,143		
Nebraska.....	Oct. 227	10	64	266	87	161	1	2	9	13	31	7	878		
10 Mos. 3	3,130	82	481	3,250	787	1,420	28	7	131	72	229	100	9,720		
Nevada.....	Oct. 42	1	21	33	32	9	.....	1	1	23	1	1	162	
10 Mos. 457	3	140	542	231	103	9	6	60	1	90	6	1,639			
New Hampshire.....	Oct. 61	21	60	18	42	3	7	3	19	1	235	1	428		
10 Mos. 4	527	7	219	655	219	235	49	18	36	155	20	2,467			
New Jersey.....	Oct. 3	17	535	9	157	145	175	37	2	14	36	35	1,770		
10 Mos. 62	160	5,343	117	1,536	5,568	1,682	1,689	407	40	233	375	236	270	17,725	
New Mexico.....	Oct. 2	177	1	45	149	31	46	2	7	3	54	1	518		
10 Mos. 14	2,207	10	348	1,589	647	464	86	6	86	85	213	13	5,720		
New York.....	Oct. 11	36	1,189	15	346	829	268	381	99	39	13	62	3,552		
10 Mos. 138	410	10,939	179	3,684	10,692	2,534	4,101	733	312	381	701	988	257	36,027	
North Carolina.....	Oct. 769	1	148	671	188	181	35	3	12	54	25	4	2,091		
10 Mos. 9	7,545	39	1,098	5,652	1,362	1,426	235	21	216	270	188	30	18,091		
North Dakota.....	Oct. 131	1	34	142	18	92	.....	1	1	7	.....	1	438
10 Mos. 1	1,366	1	278	1,454	299	823	3	5	52	64	1	4,347			
Ohio.....	Oct. 897	8	250	903	157	322	16	10	25	63	84	21	2,759		
10 Mos. 35	5	9,570	81	2,604	10,445	1,937	3,423	206	189	356	643	460	194	30,148	
Oklahoma.....	Oct. 810	72	523	122	157	13	4	10	9	9	14	7	1,541		
10 Mos. 8	5,972	7	691	5,199	1,380	1,413	45	22	163	134	100	61	15,188		
Oregon.....	Oct. 275	21	77	244	115	118	21	1	9	24	125	28	1,064		
10 Mos. 22	3,051	74	739	2,801	1,158	1,086	121	12	123	92	720	140	10,139		
Pennsylvania.....	Oct. 3	72	315	824	173	424	19	23	27	71	74	36	2,010		
10 Mos. 80	368	9,919	109	3,325	9,727	2,283	4,100	428	175	407	682	490	301	32,412	
Rhode Island.....	Oct. 88	5	20	89	15	49	2	2	2	6	3	1	291		
10 Mos. 35	2	649	46	178	676	109	204	39	5	35	27	28	12	2,045	
South Carolina.....	Oct. 190	43	107	43	43	36	3	1	1	9	5	6	438		
10 Mos. 2	3,548	5	866	2,454	504	541	50	50	71	69	45	6	8,161		
South Dakota.....	Oct. 108	2	25	157	29	74	4	4	6	19	424	1	424	
10 Mos. 1,226	21	249	1,305	390	810	.....	4	2	5	23	8	1	1,351	
Tennessee.....	Oct. 502	2	88	415	121	172	11	2	5	23	8	1	1,351		
10 Mos. 1	5,823	8	968	5,152	1,348	1,431	108	10	132	304	85	21	15,400		
Texas.....	Oct. 2,603	9	350	2,049	393	633	27	8	34	98	69	32	6,321		
10 Mos. 91	24,826	83	2,682	19,842	4,058	5,017	249	75	531	1,137	599	144	58,634		
Utah.....	Oct. 124	48	114	32	105	3	3	2	2	1	53	8	491		
10 Mos. 5	1,133	7	259	585	429	470	27	10	37	23	200	29	3,514		
Vermont.....	Oct. 52	2	13	37	19	18	1	1	3	1	23	1	171		
10 Mos. 2	619	4	159	617	216	237	12	2	41	7	167	12	2,103		
Virginia.....	Oct. 467	1	127	466	126	167	9	9	11	59	29	4	1,476		
10 Mos. 22	11	5,090	14	1,195	5,093	1,082	1,279	121	49	192	184				

es*

Total

2,609
13,873
606
5,853
2,020
13,831
6,136
53,696
1,170
8,729
731
6,199
208
2,054
91
1,666
1,925
17,873
1,556
21,733
486
4,980
2,773
31,731
1,985
20,945
1,394
15,305
1,309
14,146
1,231
13,051
1,851
16,111
459
4,256
616
8,166
1,228
10,935
2,417
29,374
1,254
15,019
2,553
14,999
1,977
20,103
585
6,143
878
9,720
162
1,639
235
2,467
1,770
17,725
518
5,720
3,552
36,027
2,091
18,091
428
4,347
2,759
30,148
1,541
15,188
1,064
10,139
2,810
32,412
291
2,045
436
8,161
424
4,226
1,351
15,400
6,321
59,634
491
3,514
171
2,103
1,476
14,805
1,046
10,916
566
5,875
1,147
13,882
386
3,419

17

71,254
82,861
686,093
789,231

Can I afford not to own a Mack?

It's true that some Mack models have a higher initial price over some other trucks. But that's only a part of the story in the over-all cost of operating a truck...and a minor one at that.

When you buy a Mack you save money, many times over, by eliminating the terrific expense of *road failures, costly repairs, and loss of earning power during down-time.*

If you roll up high mileage in over-the-road operation, you can't afford to be without the big fuel savings of Mack's Thermodyne® Diesel engine. Or, if your operation calls for gasoline power you can't beat the performance benefits of

the famous Mack Thermodyne gasoline engine.

To meet the problem of greater payload capacity, you should have the advantages of the weight savings you get with "B" Series Macks with either standard or Contour Cab. To achieve shorter overall length with light weight, Mack offers you *true cab-over-engine* models. And you know that where service is especially severe you need the ruggedness of Mack six-wheelers with the famous Balanced Bogie and exclusive Power-Divider.

Yes—no matter what type of hauling you're engaged in — the fact of the matter is "You Can't Afford Not To Own A Mack."



MACK TRUCKS, INC., EMPIRE STATE BLDG.,
NEW YORK 1, N. Y.

Do Not Let Passengers Get Cold Feet

EQUIPMENT, such as a heater, installed for bus passenger convenience, can become a legal liability if it is not operating correctly. For example:

A Rochester, N. Y., bus line paid

\$5,000 last winter because somebody forgot to check a heater before the bus went out. The trip was between Bath and Rochester. The run was made on December 1 and the temperature was around 17 deg F that day.

By Francis George

The passengers complained about the bus being cold, but the heater wouldn't work. All the driver could do was suggest that they stamp their feet, which the passengers did.

An 18-year old girl was on the bus for four hours and froze both feet. She blamed the bus company, claiming they had a duty to provide safe transportation and that it was not safe if she froze her feet enroute. She sued and the judge agreed with her. Damages were assessed at \$5,000.

MAKES
Only Domestic

For the express truck to the intercity models listed extra optional engines, and these models considered standard

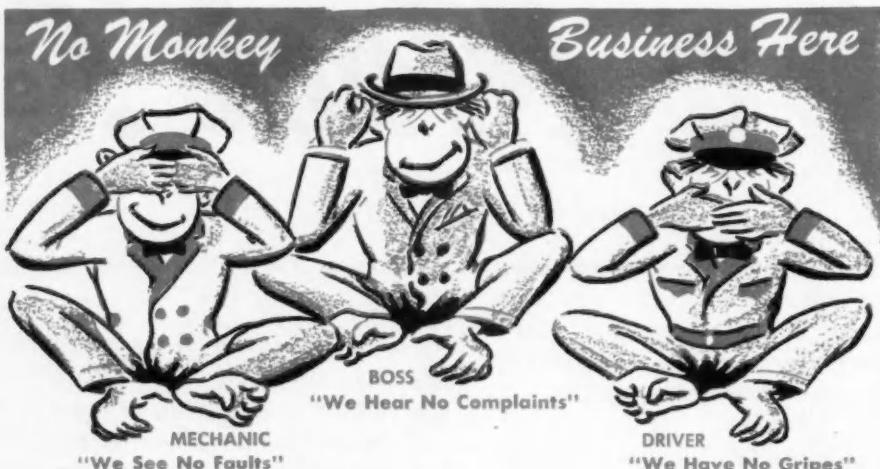
CHASE
The chassis listed minimum standard tires and standards are F.O.B. factory not include the otherwise noted

REC
GROSS V
FOR NO
The Gross Weight

MAKES—ALL
B—Bendix.
BL—Brown-Lipe.
Bu—Bur—Bud.
BW—Bendix-Wright.
C—Chevrolet.
Cl or Cla—Clark.
Con—Continental.
Cu or Cum—Cummins.
Eat—Eaton.
F—Ford.
Fu—Fuller.
G—H—Goodys.
H—Horch.
Mer—Mercedes.
HS—Hall-Scott.
Int—International.
Kai—Kaiser.
L—Lockheed.
LeR—LeRoi.
LH—Lockheed.
“hi-Tork”
LT—Lockheed.
Ken rear.
LW—Lockheed.
sin rear.
M—Midland.
N.P.—New P.
O or Ow—Own.
Op or Opt—Optional.
Shu—Shuler.
Spi—Spicer.
T or Tim—Axe Co.

c.f.—Cab Forward.
c.o.—Cab-Off design.
(D)—Diesel-engine only.
(T)—Designed only.
(C)—Ford or GM.
(R)—Romanian.
▲—Denotes when used prices.

CHEVROLET
—Includes a tank and
—7.50/20 c.i. engine with
G.V.W. used on d.
++—Own. Load available.
▲—8.25/20 c.i. required when
rears are
++—Diameter
2.6558;
2.7168;
2.7478; R.
Length 5.
Hydraulic
Heavy du
mission o
†—Also avail
□—5.43 avai



ARE YOU CUTTING YOUR DOCK TRANSFER COSTS?
IF YOU MOVE MORE THAN 25 TRAILERS PER DAY . . . YOU CANNOT AFFORD TO BE WITHOUT THE BARTLETT SPOTTING HYDRAULIC 5TH WHEEL.

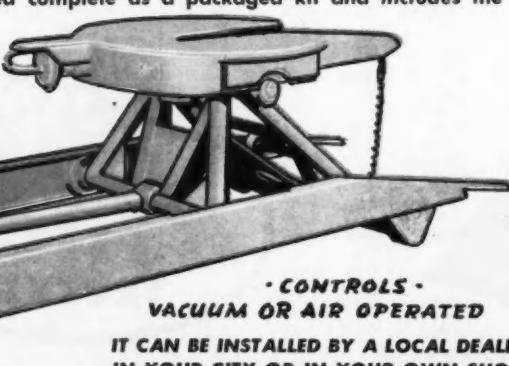
YES . . . DOCK SPOTTING COSTS CAN BE CUT $\frac{2}{3}$ WITH THIS BARTLETT “SPEEDY” LIFTING FIFTH WHEEL . . . IT WILL LIFT 50,000 LBS. 14" HIGH.

RECOGNIZED AS THE BEST EXPEDIENT NOT ONLY IN SPOTTING TIME BUT BY ELIMINATING DAMAGE TO TRAILER SUPPORTS, BODY NOSE PUSH-UPS, NOSE DIVING AND COUPLINGS.

THE BARTLETT SPECIAL FIFTH WHEEL IS REINFORCED TO GIVE YEARS OF UNINTERRUPTED SERVICE. IT HAS HAD 7 YEARS OF ENDURANCE TESTS UNDER THE HARDEST SERVICE BY ALL TRUCKERS NATIONALLY.

The Bartlett Assembly is shipped complete as a packaged kit and includes the heavy duty fifth wheel.

ALSO AVAILABLE FOR ROLLER TYPE TRAILER FLOORS AND LOW BED TRAILERS WITH 24" LIFT TO CARRY 60,000 LBS.



BARTLETT TRAILER CORPORATION

3080 ARCHER AVE. • CORNER OF ASHLAND • CHICAGO 8 • VIRGINIA 7-1160

Bus Fleet's Responsibility

At the trial the bus line was able to prove that her blood circulation was restricted and that she was more susceptible to cold than the average person. However, the judge said that common carriers should foresee that some of their passengers will have low blood pressure and poor circulation and must provide properly heated buses for them.

It is only relatively recently that buses have been adequately heated. Every bus man over 35 can remember when buses were not heated at all or with only a very primitive exhaust heater. What starts life as a luxury soon becomes a necessity and then a legal requirement. If it does not operate properly the owner becomes liable in damages.

Other Possibilities

If air conditioning becomes common on buses, it probably won't be many years before some passenger will collapse from the heat on a bus where the air conditioning has gotten out of order and he will sue the bus line and win.

If a bus is equipped with any device for comfort or safety, it must be in working order or it is a trap that can cause more harm than good. Forget nothing when checking a bus out!



CCJ's Truck Specifications

COMPILED FROM DATA SUPPLIED EACH MONTH BY MANUFACTURERS

KEY TO DEFINITIONS

MAKE AND MODEL

Only Domestic Truck Models are listed.

OPTIONAL UNITS

For the express purpose of best fitting the truck to the individual job most of the models listed can be provided with optional engines, transmissions, axles, etc., and these models when so equipped are considered standard stock models.

CHASSIS LIST PRICE

The chassis list price applies to the minimum standard wheelbase with standard tires and standard equipment. All prices are F.O.B. factory. Chassis list price does not include the price of the Cab unless otherwise noted.

RECOMMENDED

GROSS VEHICLE WEIGHT FOR NORMAL SERVICE

The Gross Weights published herewith are

those supplied by manufacturers as their Recommended Gross Vehicle Weights for Normal Operating Conditions, and are based upon the Maximum Authorized Tire Size listed. In actual practice the manufacturer may either increase or decrease the gross vehicle weight rating when either favorable or unfavorable operating conditions are involved. Since the proper performance of a motor truck depends upon many factors, including grades, road conditions, etc., the gross weights that a manufacturer is prepared to recommend will vary with particular conditions, and the manufacturer's own standard of safety factors. Specific recommendations, therefore, should be obtained from the manufacturer's representative.

CHASSIS WEIGHT

The chassis weight listed includes the weight of the minimum standard wheelbase chassis, with cowl, with standard tires, with standard equipment, with crankcase and cooling system full, and 5 gallons of fuel in the tank. It does not include the

weight of the Cab. This applies to C.O.E. as well as conventional chassis types. Exceptions are noted.

STANDARD TIRE SIZE

The standard tire size listed is that which is included in the Chassis List Price.

MAXIMUM AUTHORIZED TIRE SIZE

The tire size listed in this column is the maximum size recommended by the manufacturer of the chassis for the Gross Vehicle Weight for Normal Operating Conditions. It is furnished at extra cost, if it differs from the standard size. Dual rears are understood; exceptions noted.

MINIMUM STANDARD WHEELBASE

The minimum standard wheelbase is the so-called standard wheelbase on which the Chassis List Price is based.

MAXIMUM STANDARD WHEELBASE

The maximum standard wheelbase is the extreme end of the standard range of wheelbases offered by the chassis maker.

MAXIMUM BRAKE HP.

Maximum Brake Horsepower at Given R.P.M. is actual dynamometer reading without accessories.

GEAR RATIO RANGE

Gear Ratio Range in High—Ratio within the range given are available at no extra cost. Exceptions are noted.

TRACTORS

Unless given the designation (N)—meaning not available as a tractor—all standard models may be assumed to be available as tractors. Exclusively Tractor models are designated (T).

KEY TO ABBREVIATIONS

MAKES—ALL

B—Bendix.
BL—Brown-Lipe.
Bu or Bud—Buda.
BW—Bendix-Westinghouse.
C—Chevrolet.
Cl or Cla—Clark.
Con—Continental.
Cu or Cum—Cummins-Diesel.
EAT—Eaton.
F—Ford.
Fu—Fuller.
G—Goodyear-Hawley type.
H—Hotchkiss.
M—Mercedes.
HS—Hall-Scott.
Int—International Harvester.
Kai—Kaiser Motors Corp.
L—Lockheed.
LeR—LeRoi.
LH—Lockheed front, Wagner "hi-Tork" rear.
LT—Lockheed type front Timken rear.
LW—Lockheed front, Wisconsin rear.
M—Midland.
N.P.—New Process.
O or Ow—Own.
Op or Opt—Optional.
Shu—Shuler.
Spt—Stiebel.
T or Tim—Timken-Detroit Axle Co.

T—Timken-Detroit—Westinghouse.

TW—Timken-Detroit—Wisconsin.
Var—Variable.
WG—Warner Gear.
Wa—Walter.
W or Wi—Wisconsin.
WE—Wagner Electric.
Wg—Wagner "hi-Tork."
W—Westinghouse.
WW—Westinghouse or Wagner

WHEELS DRIVEN

2F—Forward unit of Rear Axle Group.
2R—Rear Unit of Rear Axle Group.
4R—Forward and rear units of Rear Axle Group.
6—All wheels.

BRAKES—SERVICE

Location
4—Four Wheels, front and rear.
4r—Four Wheels, rear only.

Type

I—Internal.
X—External.

Operation

A—Air.
H—Hydraulic.

V—Vacuum. D or Dp—Dual Primary.

BRAKES—HAND
Location
C—Center of double propeller shaft.
2—Rear wheels.
4—Four wheels.
6—Six wheels.
P—Back of Power Divider.
J—Jackshaft.
T—Transmission.
F—Driveshaft.

Type

D—Tru-Stop disk.
I—Internal.
M—Mechanical.
X—External.

PD—Two drums on rear of power divider.
F—Mechanical, foot operated

BRAKE DRUMS

Material
a—Cast alloy iron.
A—American Car Foundry.
c—Cast iron.
Cc—Composite Front. Cast Iron in rear.
Ce—Centrifuse.

CI—Copper Iron. Co—Composite.

CA—Front, centrifugal cast; rear, composite.

D—Detroit.
E—Ermalite.
G—Gumite.
N—Nickel iron.
S—Steel.

(Where a combination of any of the above is used, the first reference mark applies to the front and the second to the rear drums.)

FRAME

Type
C—Channel.
T—Channel tapered front and rear.

L—Channel reinforced with liner.

B—Channel reinforced with both liner and fishplate.

P—Channel reinforced with plate.

TL—Channel tapered front and rear reinforced with liner.

D—Drop Center.
TF—Tapered front.

A—Straight section side members, lined with oak inserts.

Z—Reinforced (X) member frame, box type sections.
BG—Box girder.

REAR AXLE

Final Drive and Type

R—Bevel.

CD—Chain Drive.

F or Hy—Hyphold.

d—Dual range axle.

2—Double Reduction.

S—Spiral bevel.

W—Worm.

3/4—Three Quarters Floating.

1/2—Semi-Floating.

T—Torque Tube.

GEAR RATIOS

(**) Only one ratio.

Drive and Torque

H—Hotchkiss (springs).

R—Radius Rods.

L—Parallel Torque Rods.

T—Torque Arm.

GOVERNOR STANDARD

Y—Yes.

N—No.

KEY TO REFERENCES

C.F.—Cab Forward design. C.O.E.—Cab Over-Engine design.

(D)—Diesel-engine equipped.
(T)—Designed for tractor use only.
(C)—Ford or Chevrolet Models.
(R)—Remanufactured Fords.
*—Denotes "Includes Cab" when used with weights or prices.

CHEVROLET

*—Includes spare tire, full fuel tank and cooling system.
—7.50/20 can be used on the front with no decrease in G.V.W. when 8.25/20 are used on dual rear wheels.
*—Own Loadmaster engine available, extra cost.
*—8.25/20 from tires are required when 9.00/20 dual rears are used.
**—Diameter: (Average) Front, 2.6858; Front, 2.7168; Rear, 2.7478; Rear, 2.7788. Total Length 5 1/2.
*—Hydramatic optional.
*—Heavy duty 3 speed transmission optional.
*—Also available in 5.14 ratio.
*—5.43 available.

**—Two speed axle available.
*—8 1/2 x 2 1/2 x 1/4 is used with heavy-duty equipment.

**—Powerglide optional.
*—Blow Flame 125 engine optional.

**—Johnmaster 261 engine optional.

DODGE

*—Front only: Rear 7.00 168.
*—Front only: Rear 8.25 168.
*—Front only: Rear 7.50 20.
*—Front only: Rear 9.00 20.
*—Front only: Rear 10.00 20.
*—Front only: Rear 8.25 20.
*—Twin carburetion.

**—Torque Divider, Timken T70-2 speed.

FORD

—17000 for 220 Wheelbase.
*—Rear Only.
**—Front Only: Rear 8.25 188.
*—Cowl Axle Dimension.
*—9.25x2.94x.25 Optional.

*—Weight Includes Cab.
**—With dual rear wheels only: 118-3800 hp and 195 torque with single wheels.

KENWORTH

**—Timken T13129 PA Trailering Axle.
†—14.00 24, front: 16.00 24, rear.

*—C.O.E. optional.
*—One man cab.

**—Torque converter plus Torquematic transmission optional.

*—Cat beside engine optional.
Both C.O.E. and cab beside engine optional.

†—Front only: 14.00/24 front; 18.00/25 rear.

**—Cummins NHRBSID 600.
**—Allison TCI 654 plus TG 602.

NAPCO

*—NAPCO — Northwestern Auto Parts Company (Chevrolet 4-wheel drive conversion).

**—See same footnote under Chevrolet.

OSHKOSH

*—Includes cab.

**—1091 cu. in.

*—Hydraulic coupling optional.

*—Dependent upon engine.

REO

**—Model 331-OA and 331-OA LPG engines can be furnished.

**—Two speed axle available.

*—Double reduction and 2 speed available.

*—Buda 6DTS-468 diesel engine available.

**—Model 255-OA-LPG or 292-OA engine can be furnished.

†—Front only: Rear 10.00/20.

†—OH-160 or OH-160 LPG engine can be furnished.

**—OH-160LPG engine can be furnished.

**—Model OV-220 engine can be furnished.

**—Model OV-225 engine can be furnished.

**—Model SQW tandem axle can be furnished.

STUDEBAKER

*—H.D. 6.20 or 6.80 optional.

*—Two speed 5.93-8.10 optional.

*—Two speed 6.48-8.86 optional.

*—Front only: Rear 8.25/20D

*—Front, centrifugal cast; rear, composite.

*—Reinforcing plate at rear of frame.

TRUCKSTELL

*—Single front, dual rear.

**—With 3 speed power divider.

*—Weight with cab and maximum tires.

*—Including slip-over reinforcing frame channels.

*—Air brake optional.

WARD LA FRANCE

*—Available with optional rear axles.

**—Available with 11.00/22 or 12.00/20 tires for G.V.W. of 60,000 lbs and optional front and rear axles.

**—Auxiliary transmission.

Fulmer 3A65, 3B65, 3A92 and 3B92.

WILLYS

*—Complete vehicle-Pick-up Type body.

*—Three speed transmission, 2 speed transfer case.

(Turn to Next Page, Please)

Line Number	MAKE AND MODEL	Chassis List Price	WHEEL-BASE	TIRE SIZES	ENGINE DETAILS		TRANSMISSION	REAR AXLE	FRONT AXLE	BRAKES	FRAME				
					Front Standard and Chassis Weight (See Notes)	Standard Tire Size (See Notes)	Main Bearings	Model Standard	Model Standard	Model Standard	Model Standard				
1 Available	200 (e.o.e.)	\$5600	700/20D	8.25/20	Wau BM	6-3/4x4	263.5	9.178	78-28007	2-1/4x10	NWG T9	4 Tim E100DPH/HF			
2	225 (e.o.e.)	6200	750/20D	8.25/20	Wau BZ	6-4x4	205.0	9.178	78-28007	2-1/4x10	NWG T97	4 Tim E100DPH/HF			
3	250 (e.o.e.)	6400	825/20D	10.00/20	Wau BZ	6-4x4	220.5	9.105	78-28007	2-1/4x10	NFG T9	5 Tim L100DPH/HF			
4	275 (e.o.e.)	6800	800/20D	10.00/20	Wau MZA	6-4x4	220.5	9.105	78-28007	2-1/4x10	NFG T97	5 Tim L100DPH/HF			
5	300 (e.o.e.)	7200	750/20D	10.00/20	Wau MZA	6-4x4	204.5	6.855	130	3000/7	NFG T9	5 Tim L100DPH/HF			
6	325 (e.o.e.)	7600	800/20D	10.00/20	Wau MZA	6-4x4	204.5	6.855	130	3000/7	NFG T97	5 Tim L100DPH/HF			
7	350 (e.o.e.)	8100	1000/20D	10.00/20	Wau MZA	6-4x4	204.5	6.855	130	3000/7	NFG T9	5 Tim L100DPH/HF			
8	375 (e.o.e.)	8500	1000/20D	10.00/20	Wau MZA	6-4x4	204.5	6.855	130	3000/7	NFG T97	5 Tim L100DPH/HF			
9	400 (e.o.e.)	8600	1000/20D	10.00/20	Wau MZA	6-4x4	204.5	6.855	130	3000/7	NFG T9	5 Tim L100DPH/HF			
10 (D) (e.o.e.)	602	8200	1000/20D	10.00/20	Cum	6-4x4	204.5	6.855	130	3000/7	NFG T9	5 Tim L100DPH/HF			
11 Blederman	NHD	130	180	21000	6070.8	8.25/20D	10.00/20	Her XLDD	6-1/4x1	339.6	9.22	131	3200	7-2-1/4x10	
12	NSD	130	180	21000	6070.8	8.25/20D	10.00/20	Her XLDD	6-1/4x1	339.6	9.22	131	3200	7-2-1/4x10	
13	NSR	130	180	21000	6070.8	8.25/20D	10.00/20	Her XLDD	6-1/4x1	339.6	9.22	131	3200	7-2-1/4x10	
14	HL	137	190	26000	12200	10.00/20D	11.00/20	Con T6427	6-4x4	339.6	9.22	131	3200	7-2-1/4x10	
15	CH	137	190	26000	12200	10.00/20D	11.00/20	Con T6427	6-4x4	339.6	9.22	131	3200	7-2-1/4x10	
16 Chevrolet	Sdn. Driv.	D54	1600	115	O-BI Fl. 115*	6-3	1-1/4x1	236.7	5.200	115	3700/4	NOW	3 Own		
17	B54	1600	115	8.25/20	Wau BM	6-3	1-1/4x1	236.7	5.200	112	3700/4	NOW	3 Own		
18	K54	1600	115	8.25/20	Wau BZ	6-3	1-1/4x1	236.7	5.200	112	3700/4	NOW	3 Own		
19	P54	1600	115	8.25/20	Wau MZA	6-3	1-1/4x1	236.7	5.200	112	3700/4	NOW	3 Own		
20	(e.o.e.)	1255	1257	7.50/17.5	O-Load Mas.	6-3	1-1/4x1	236.7	5.192	110	3800/4	NOW	4 Own		
21	N54	1307	1327	7.50/17.5	O-Load Mas.	6-3	1-1/4x1	236.7	5.192	110	3800/4	NOW	4 Own		
22	P54	1344	1361	7.50/20	O-Load Mas.	6-3	1-1/4x1	236.7	5.200	112	3700/4	NOW	4 Own		
23	R54	1481	1611	7.50/20	O-Load Mas.	6-3	1-1/4x1	236.7	5.200	112	3700/4	NOW	4 Own		
24	S54	1634	1671	7.50/20	O-Load Mas.	6-3	1-1/4x1	236.7	5.200	112	3700/4	NOW	4 Own		
25	T54	1634	1671	7.50/20	O-Load Mas.	6-3	1-1/4x1	236.7	5.200	112	3700/4	NOW	4 Own		
26	U54	1671	1713	7.50/20	O-Load Mas.	6-3	1-1/4x1	236.7	5.200	112	3700/4	NOW	4 Own		
27	V54	1713	1759	7.50/20	O-Load Mas.	6-3	1-1/4x1	236.7	5.200	112	3700/4	NOW	4 Own		
28	(e.o.e.)	8854	2024	110	4100	8.25/20D	10.00/20	Her XLDD	6-1/4x1	339.6	9.22	131	3200	7-2-1/4x10	
29	ST54	2061	134	4100	8.25/20D	10.00/20	Her XLDD	6-1/4x1	339.6	9.22	131	3200	7-2-1/4x10		
30	(e.o.e.)	8854	2098	135	4100	8.25/20D	10.00/20	Her XLDD	6-1/4x1	339.6	9.22	131	3200	7-2-1/4x10	
31	U54	2098	135	4100	8.25/20D	10.00/20	Her XLDD	6-1/4x1	339.6	9.22	131	3200	7-2-1/4x10		
32	(e.o.e.)	2061	134	4100	8.25/20D	10.00/20	Her XLDD	6-1/4x1	339.6	9.22	131	3200	7-2-1/4x10		
33	(e.o.e.)	2098	135	4100	8.25/20D	10.00/20	Her XLDD	6-1/4x1	339.6	9.22	131	3200	7-2-1/4x10		
34	V54	1634	1671	7.50/20	O-Load Mas.	6-3	1-1/4x1	236.7	5.200	112	3700/4	NOW	4 Own		
35	W54	1671	1713	7.50/20	O-Load Mas.	6-3	1-1/4x1	236.7	5.200	112	3700/4	NOW	4 Own		
36	Sen. Bus Ch.	X54	1725	212	1600	4100	7.50/20D	8.25/20	O-Load Mas.	6-3	1-1/4x1	236.7	5.200	112	3700/4
37	Sen. Bus Ch.	Z54	1725	212	1600	4100	7.50/20D	8.25/20	O-Load Mas.	6-3	1-1/4x1	236.7	5.200	112	3700/4
38	Sen. Bus Ch.	CH	1725	212	1600	4100	7.50/20D	8.25/20	O-Load Mas.	6-3	1-1/4x1	236.7	5.200	112	3700/4
39 Dodge	C-1-B6	1027	108	116	4800	1970.6	8.00/16S	6-50/16S	Own VT-334	3-1/4x4	8	NOW-D	3 Own		
40	C-1-C6	1147	108	116	4800	1970.6	8.00/16S	6-50/16S	Own VT-334	3-1/4x4	8	NOW-D	3 Own		
41	C-1-C6	1042	116	116	5800	2225.7	9.00/16S	6-50/16S	Own VT-334	3-1/4x4	8	NOW-D	3 Own		
42	(e.l.)	1042	116	116	6300	2225.7	9.00/16S	6-50/16S	Own VT-334	3-1/4x4	8	NOW-D	3 Own		
43	C-1-C8	1244	116	116	5800	2275.6	9.00/16S	6-50/16S	Own VT-334	3-1/4x4	8	NOW-D	3 Own		
44	C-1-D6	1192	116	126	8000	2275.6	9.00/16S	6-50/16S	Own VT-334	3-1/4x4	8	NOW-D	3 Own		
45	C-1-D8	1312	116	126	8000	2280.7	9.00/16S	6-50/16S	Own VT-334	3-1/4x4	8	NOW-D	3 Own		
46	(e.l.)	1129	116	126	8000	2280.7	9.00/16S	6-50/16S	Own VT-334	3-1/4x4	8	NOW-D	3 Own		
47	C-1-D6	1129	116	126	8000	2280.7	9.00/16S	6-50/16S	Own VT-334	3-1/4x4	8	NOW-D	3 Own		
48	C-1-EU6	2359	121	142	7900	10100	7.50/17.5	8.25/20	Own VT-334	3-1/4x4	8	NOW-D	3 Own		
49	C-1-F6	1400	121	142	7900	10100	7.50/17.5	8.25/20	Own VT-334	3-1/4x4	8	NOW-D	3 Own		
50	(e.l.)	1400	121	142	7900	10100	7.50/17.5	8.25/20	Own VT-334	3-1/4x4	8	NOW-D	3 Own		
51	C-1-HA8	1429	129	1480	4100	6.30/20D	8.25/20D	Own VT-334	3-1/4x4	8	NOW-D	3 Own			
52	C-1-CA8	1429	129	1480	4100	6.30/20D	8.25/20D	Own VT-334	3-1/4x4	8	NOW-D	3 Own			
53	C-1-JA8	1436	129	1480	4100	6.30/20D	8.25/20D	Own VT-334	3-1/4x4	8	NOW-D	3 Own			
54	C-1-JM6	1424	108	162	4775.6	7.50/20	9.00/20	Own VT-334	3-1/4x4	8	NOW-D	3 Own			
55	C-1-HA8	1403	108	162	4775.6	7.50/20	9.00/20	Own VT-334	3-1/4x4	8	NOW-D	3 Own			
56	C-1-HM6	1424	108	162	4775.6	7.50/20	9.00/20	Own VT-334	3-1/4x4	8	NOW-D	3 Own			
57	C-1-HMA8	1424	108	162	4775.6	7.50/20	9.00/20	Own VT-334	3-1/4x4	8	NOW-D	3 Own			
58	C-1-HA8	1424	108	162	4775.6	7.50/20	9.00/20	Own VT-334	3-1/4x4	8	NOW-D	3 Own			
59	C-1-HA8	1424	108	162	4775.6	7.50/20	9.00/20	Own VT-334	3-1/4x4	8	NOW-D	3 Own			
60	C-1-HA8	1424	108	162	4775.6	7.50/20	9.00/20	Own VT-334	3-1/4x4	8	NOW-D	3 Own			
61	C-1-JA8	1424	108	162	4775.6	7.50/20	9.00/20	Own VT-334	3-1/4x4	8	NOW-D	3 Own			
62	C-1-JA8	1424	108	162	4775.6	7.50/20	9.00/20	Own VT-334	3-1/4x4	8	NOW-D	3 Own			
63	C-1-JM6	1424	108	162	4775.6	7.50/20	9.00/20	Own VT-334	3-1/4x4	8	NOW-D	3 Own			
64	C-1-JA8	1424	108	162	4775.6	7.50/20	9.00/20	Own VT-334	3-1/4x4	8	NOW-D	3 Own			
65	C-1-JA8	1424	108	162	4775.6	7.50/20	9.00/20	Own VT-334	3-1/4x4	8	NOW-D	3 Own			
66	C-1-KA8	1424	108	162	4775.6	7.50/20	9.00/20	Own VT-334	3-1/4x4	8	NOW-D	3 Own			
67	C-1-KA8	1424	108	162	4775.6	7.50/20	9.00/20	Own VT-334	3-1/4x4	8	NOW-D	3 Own			
68	C-1-KA8	1424	108	162	4775.6	7.50/20	9.00/20	Own VT-334	3-1/4x4	8	NOW-D	3 Own			
69	C-1-KMA8	1424	108	162	4775.6	7.50/20	9.00/20	Own VT-334	3-1/4x4	8	NOW-D	3 Own			
70	C-1-KA8	1424	108	162	4775.6	7.50/20	9.00/20	Own VT-334	3-1/4x4	8	NOW-D	3 Own			
71	C-1-KA8	1424	108	162	4775.6	7.50/20	9.00/20	Own VT-334	3-1/4x4	8	NOW-D	3 Own			
72	C-1-KA8	1424	108	162	4775.6	7.50/20	9.00/20	Own VT-334	3-1/4x4	8	NOW-D	3 Own			
73	C-1-KA8	1424	108	162	4775.6	7.50/20	9.00/20	Own VT-334	3-1/4x4	8	NOW-D	3 Own			
74	C-1-TA8	1424	108	162	4775.6	7.50/20	9.00/20	Own VT-334	3-1/4x4	8	NOW-D	3 Own			
75	C-1-V8	1424	108												

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IT SHAKES
IT SHIMMIES

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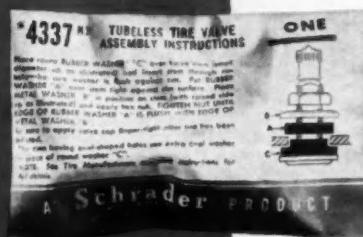


Line Number	MAKE AND MODEL	WHEEL BASE		TIRE SIZES				ENGINE DETAILS				TRANS-MISSION		REAR AXLE		FRONT AXLE		BRAKES		FRAME	
		Front	Rear	Dual rear	Single rear	Main Bearings	Max. P. & Break P. M.	Stroke	Cyl. of cylinder and stroke	Model	Overhaul Standard	Model	Model	Model	Model	Model	Model	Model	Model	Dimensions C.M.A. Min. Std. W. B.	Slide Rail Dimensions C.M.A. Min. Std. W. B.	Type
1 Dodge-Coupe	C-1-YA6 (Sic. Bus) C-1-F86	130	190	28000	8525/9.00-20D†	11.00/20	Open T-352	6-4x4	4136.5/343/171-3200/7-3-11/2	Y Cha 290-V2	5 Tim R-300A	SPD H6.42-9-49 Tim FID-300	H4IH V5.63-6-8 Own	101C							
2 Dodge-Coupe	C-1-H86	145	193	12000	8525/7.50-20D	10.00/20	Own T8-342	6-3-4	4136.5/343/110-3600/4-2-5-4-8	Y Np-89960	4 Tim Q342	H4F H5.63-6-8 Own	H4F H5.63-6-8 Own	H4F H5.63-6-8 Own	H4F H5.63-6-8 Own	H4F H5.63-6-8 Own	H4F H5.63-6-8 Own	H4F H5.63-6-8 Own	H4F H5.63-6-8 Own	101C	
3 Dodge-Coupe	C-1-J86	1820	193	16000	4755/7.50-20D	8.25/20	Own T8-344	6-3-4	4136.5/343/120-3600/4-2-5-5-1	Y Np-89960	4 Tim Q344	H4F H5.63-6-8 Own	H4F H5.63-6-8 Own	H4F H5.63-6-8 Own	H4F H5.63-6-8 Own	H4F H5.63-6-8 Own	H4F H5.63-6-8 Own	H4F H5.63-6-8 Own	H4F H5.63-6-8 Own	101C	
4 Dodge-Coupe	C-1-J86	1820	213	17000	4755/7.50-20D	8.25/20	Own T8-344	6-3-4	4136.5/343/120-3600/4-2-5-5-1	Y Np-89960	4 Tim Q344	H4F H5.63-6-8 Own	H4F H5.63-6-8 Own	H4F H5.63-6-8 Own	H4F H5.63-6-8 Own	H4F H5.63-6-8 Own	H4F H5.63-6-8 Own	H4F H5.63-6-8 Own	H4F H5.63-6-8 Own	101C	
5 Dodge-Coupe	C-1-J86	2447	213	17500	5275/7.50-20D	9.00/20	Own T8-346	6-3-4	4136.5/343/120-3600/4-2-5-5-1	Y Np-89960	4 Tim Q346	H4F H5.63-6-8 Own	H4F H5.63-6-8 Own	H4F H5.63-6-8 Own	H4F H5.63-6-8 Own	H4F H5.63-6-8 Own	H4F H5.63-6-8 Own	H4F H5.63-6-8 Own	H4F H5.63-6-8 Own	101C	
6 Dodge-Coupe	C-1-R88	3521	231	20000	6100/8.25/20D	9.00/20	Own T8-348	6-3-4	4136.5/331/7-0288/153-3600/5-2-5-5-1	Y Np-89940	5 Tim H-100	H4F H6.8-7-2 Tim 32516	H4F H6.8-7-2 Tim 32516	H4F H6.8-7-2 Tim 32516	H4F H6.8-7-2 Tim 32516	H4F H6.8-7-2 Tim 32516	H4F H6.8-7-2 Tim 32516	H4F H6.8-7-2 Tim 32516	H4F H6.8-7-2 Tim 32516	101C	
7 Dodge-Duplex	T	136	220	20000	6600/8.25/20D	9.00/20	Her JXD	6-4x4	420/6-2240/113-3000/7-2-5-10/4	Y Fu 5B330	5 Tim H100	B H6.13-8-15 Tim FC900	B H6.13-8-15 Tim FC900	B H6.13-8-15 Tim FC900	B H6.13-8-15 Tim FC900	B H6.13-8-15 Tim FC900	B H6.13-8-15 Tim FC900	B H6.13-8-15 Tim FC900	B H6.13-8-15 Tim FC900	101C	
8 Dodge-Duplex	T	136	220	20000	6600/8.25/20D	9.00/20	Her WXL-C-3	6-4x4	420/6-2240/113-3000/7-2-5-10/4	Y Fu 5A330	5 Tim H-300	D/F H6.42-8-38 Tim FD900	D/F H6.42-8-38 Tim FD900	D/F H6.42-8-38 Tim FD900	D/F H6.42-8-38 Tim FD900	D/F H6.42-8-38 Tim FD900	D/F H6.42-8-38 Tim FD900	D/F H6.42-8-38 Tim FD900	D/F H6.42-8-38 Tim FD900	101C	
9 Dodge-Duplex	R	136	220	20000	8520/9.00-20D	10.00/20	Her RXL-C-3	6-4x4	420/6-2240/113-3000/7-2-5-10/4	Y Fu 5A33	5 Tim H-300	D/F H6.42-8-38 Tim FD900	D/F H6.42-8-38 Tim FD900	D/F H6.42-8-38 Tim FD900	D/F H6.42-8-38 Tim FD900	D/F H6.42-8-38 Tim FD900	D/F H6.42-8-38 Tim FD900	D/F H6.42-8-38 Tim FD900	D/F H6.42-8-38 Tim FD900	101C	
10 Dodge-Duplex	R	172	208	28000	8520/9.00-20D	10.00/20	Con R6002	6-4x4	420/6-2240/113-3000/7-2-5-10/4	Y Fu 5C650	5 Tim H-200	D/F H6.42-8-38 Tim FD900	D/F H6.42-8-38 Tim FD900	D/F H6.42-8-38 Tim FD900	D/F H6.42-8-38 Tim FD900	D/F H6.42-8-38 Tim FD900	D/F H6.42-8-38 Tim FD900	D/F H6.42-8-38 Tim FD900	D/F H6.42-8-38 Tim FD900	101C	
11 Dodge-Duplex	LH	162	213	20000	11650/11.00-20D	11.00/20	Her RXL-D	6-4x4	420/6-2240/113-3000/7-2-5-10/4	Y Fu 5C650	5 Tim H-200	D/F H6.42-8-38 Tim FD900	D/F H6.42-8-38 Tim FD900	D/F H6.42-8-38 Tim FD900	D/F H6.42-8-38 Tim FD900	D/F H6.42-8-38 Tim FD900	D/F H6.42-8-38 Tim FD900	D/F H6.42-8-38 Tim FD900	D/F H6.42-8-38 Tim FD900	101C	
12 Dodge-Duplex	LH	148	220	37000	10500/11.00-20D	11.00/20	F-500	6-3-5x3	420/6-2240/113-3000/7-2-5-10/4	Y Fu 5C650	5 Tim H-200	D/F H6.42-8-38 Tim FD900	D/F H6.42-8-38 Tim FD900	D/F H6.42-8-38 Tim FD900	D/F H6.42-8-38 Tim FD900	D/F H6.42-8-38 Tim FD900	D/F H6.42-8-38 Tim FD900	D/F H6.42-8-38 Tim FD900	D/F H6.42-8-38 Tim FD900	101C	
13 Dodge-Duplex	LH	148	220	37000	11300/11.00-20D	11.00/20	F-500	6-3-5x3	420/6-2240/113-3000/7-2-5-10/4	Y Fu 5C650	5 Tim H-200	D/F H6.42-8-38 Tim FD900	D/F H6.42-8-38 Tim FD900	D/F H6.42-8-38 Tim FD900	D/F H6.42-8-38 Tim FD900	D/F H6.42-8-38 Tim FD900	D/F H6.42-8-38 Tim FD900	D/F H6.42-8-38 Tim FD900	D/F H6.42-8-38 Tim FD900	101C	
14 Ford Courier	Sedan Divy.	115	115	4600	42256/6.70/158	7.10/158	Own	6-3-5x3	420/6-2233/7-5195/120-4000/4-2-5-5-3	Y Fu 5B330	5 Tim H100	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	101C	
15 Ford Courier	Sedan Divy.	115	115	4600	42256/6.70/158	7.10/158	Own	6-3-5x3	420/6-2233/7-5195/120-4000/4-2-5-5-3	Y Fu 5B330	5 Tim H100	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	101C	
16 Ford Courier	Cow	110	110	5000	2208/6.00/168	6.50/168	Own	6-3-5x3	420/6-2233/7-5195/120-4000/4-2-5-5-3	Y Fu 5B330	5 Tim H100	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	101C	
17 Ford Courier	Cow	118	118	6900	2638/6.50/168	7.50/178	Own	6-3-5x3	420/6-2233/7-5195/120-4000/4-2-5-5-3	Y Fu 5B330	5 Tim H100	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	101C	
18 Ford Courier	Cow	118	118	6900	2738/6.50/168	7.50/178	Own	6-3-5x3	420/6-2233/7-5195/120-4000/4-2-5-5-3	Y Fu 5B330	5 Tim H100	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	101C	
19 Ford Courier	Cow	130	130	9500	3083/7.00/178	7.50/16D	Own	6-3-5x3	420/6-2233/7-5195/120-4000/4-2-5-5-3	Y Fu 5B330	5 Tim H100	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	101C	
20 Ford Courier	Cow	130	130	9500	3183/7.00/178	7.50/16D	Own	6-3-5x3	420/6-2233/7-5195/120-4000/4-2-5-5-3	Y Fu 5B330	5 Tim H100	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	101C	
21 Ford Courier	Cow	130	130	9500	3183/7.00/178	7.50/16D	Own	6-3-5x3	420/6-2233/7-5195/120-4000/4-2-5-5-3	Y Fu 5B330	5 Tim H100	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	101C	
22 Ford Cab	Cab	130	154	14000	4170/6.50/20D	7.50/20	Own	6-3-5x3	420/6-2233/7-5195/120-4000/4-2-5-5-3	Y Fu 5B330	5 Tim H100	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	101C	
23 Ford Cab	Cab	130	154	14000	4170/6.50/20D	7.50/20	Own	6-3-5x3	420/6-2233/7-5195/120-4000/4-2-5-5-3	Y Fu 5B330	5 Tim H100	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	101C	
24 Ford Cab	Cab	130	172	16000	4761/5.70/20D	8.25/20	Own	6-3-5x3	420/6-2233/7-5195/120-4000/4-2-5-5-3	Y Fu 5B330	5 Tim H100	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	101C	
25 Ford Cab	Cab	130	172	16000	4761/5.70/20D	8.25/20	Own	6-3-5x3	420/6-2233/7-5195/120-4000/4-2-5-5-3	Y Fu 5B330	5 Tim H100	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	101C	
26 Ford Cab	Cab	132	192	19500	5385/7.50/20D	9.00/20	Own	6-3-5x3	420/6-2233/7-5195/120-4000/4-2-5-5-3	Y Fu 5B330	5 Tim H100	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	101C	
27 Ford Cab	Cab	132	192	19500	5383/8.25/20D	9.00/20	Own	6-3-5x3	420/6-2233/7-5195/120-4000/4-2-5-5-3	Y Fu 5B330	5 Tim H100	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	101C	
28 Ford Cab	Cab	132	192	22000	6380/9.00/20D	10.00/20	Own	6-3-5x3	420/6-2233/7-5195/120-4000/4-2-5-5-3	Y Fu 5B330	5 Tim H100	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	101C	
29 Ford Cab	Cab	132	192	27000	4761/5.70/20D	8.25/20	Own	6-3-5x3	420/6-2233/7-5195/120-4000/4-2-5-5-3	Y Fu 5B330	5 Tim H100	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	101C	
30 Ford Tandem	Cab	144	192	27000	4761/5.70/20D	8.25/20	Own	6-3-5x3	420/6-2233/7-5195/120-4000/4-2-5-5-3	Y Fu 5B330	5 Tim H100	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	H4F H6.09-4-27 Own	101C	
31 Ford Tandem	Cab	144	192	27000	4761/5.70/20D	8.25/20	Own	6-3-5x3	420/6-2233/7-5195/120-4000/4-2-5-5-3	Y Fu 5B330	5 Tim H100	H4F H6.09-4-									

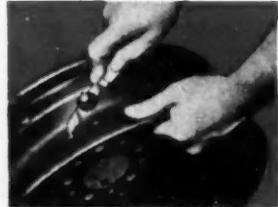
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8997

Line Number	MAKE AND MODEL	WHEEL BASE		TIRE SIZES		ENGINE DETAILS						TRANS-MISSION		REAR AXLE		FRONT AXLE		BRAKES		FRAME					
		Standard	Chassis List Price (See detailed information)	Dual rear S-single rear	Single rear	Main Bearings	No. of Cylinders & Stroke	Displacement	Comp. Ratio	Torque lb. ft.	H.P. at R.P.M.	Front and Rear	Model and Type	Side Rail Dimensions (Min. Std. W. B.)	Type										
1 Mar. Hr. - DVI-4	Willys MB	90	118	6750	7.50	168	8.25	188	4-3½ x 4½	13.4	4105	60-4000	3-233x3.48	Y	Own	41H	Front Drive	.../...	7-10-	None	...				
2 Peterbilt (D) 280	Cum NHB800	175	Opt	27000	12500	10.00	20.00	20	11.00	22	11.00	22	6-5½ x 60	73.17	500.200	-21007	1-16½	Y	Sp1 8041	12 TimR-230DPDA	2P	R5 91-6-5	TimFe900DPAW64IA	TD	
3 Peterbilt (D) 280 (top)	Cum NHB800	175	Opt	27000	12500	10.00	20	20	11.00	22	11.00	22	6-5½ x 60	73.17	500.200	-21007	1-16½	Y	Sp1 8041	12 TimR-230DPDA	2P	R5 91-6-5	TimFe900DPAW64IA	TD	
4 Peterbilt (D) 281	Cum NHB800	165	Opt	27000	10450	10.00	20	20	11.00	22	11.00	22	6-5½ x 60	73.17	500.200	-21007	1-16½	Y	Sp1 8041	12 TimR-230DPDA	2P	R5 91-6-5	TimFe900DPAW64IA	TD	
5 R60...	F-20-1	125	188	4575	7.50	20	8.25	20	Own	255	2	4104	255.6	718.07	-34007	2-16½	X	WCG-T98	4 Tim E-100+	H.F.	H. 2-6	Tim 30000	L74IVH	TD	
6 R60...	F-20-2	125	185	4575	7.50	20	8.25	20	Own	255	2	4104	255.6	718.07	-34007	2-16½	X	WCG-T98	4 Tim E-100+	H.F.	H. 2-6	Tim 30000	L74IVH	TD	
7 R60...	F-20-3	125	185	4575	7.50	20	8.25	20	Own	255	2	4104	255.6	718.07	-34007	2-16½	X	WCG-T98	4 Tim E-100+	H.F.	H. 2-6	Tim 30000	L74IVH	TD	
8 R60...	F-20-4	125	185	4575	7.50	20	8.25	20	Own	255	2	4104	255.6	718.07	-34007	2-16½	X	WCG-T98	4 Tim E-100+	H.F.	H. 2-6	Tim 30000	L74IVH	TD	
9 R60...	F-20-5	125	185	4575	7.50	20	8.25	20	Own	255	2	4104	255.6	718.07	-34007	2-16½	X	WCG-T98	4 Tim E-100+	H.F.	H. 2-6	Tim 30000	L74IVH	TD	
10 R60...	F-22-1	125	185	4600	5115	25	20	8.25	20	Own	255	2	4104	255.6	718.07	-34007	2-16½	X	WCG-T98	4 Tim E-100+	H.F.	H. 2-6	Tim 30000	L74IVH	TD
11 R60...	F-22-2	130	185	4600	5115	25	20	8.25	20	Own	255	2	4104	255.6	718.07	-34007	2-16½	X	WCG-T98	4 Tim E-100+	H.F.	H. 2-6	Tim 30000	L74IVH	TD
12 R60...	F-22-3	130	185	4600	5115	25	20	8.25	20	Own	255	2	4104	255.6	718.07	-34007	2-16½	X	WCG-T98	4 Tim E-100+	H.F.	H. 2-6	Tim 30000	L74IVH	TD
13 R60...	F-22-4	130	185	4600	5115	25	20	8.25	20	Own	255	2	4104	255.6	718.07	-34007	2-16½	X	WCG-T98	4 Tim E-100+	H.F.	H. 2-6	Tim 30000	L74IVH	TD
14 R60...	F-22-5	130	185	4600	5115	25	20	8.25	20	Own	255	2	4104	255.6	718.07	-34007	2-16½	X	WCG-T98	4 Tim E-100+	H.F.	H. 2-6	Tim 30000	L74IVH	TD
15 R60...	F-22-6	130	185	4600	5115	25	20	8.25	20	Own	255	2	4104	255.6	718.07	-34007	2-16½	X	WCG-T98	4 Tim E-100+	H.F.	H. 2-6	Tim 30000	L74IVH	TD
16 R60...	F-22-7	130	185	4600	5115	25	20	8.25	20	Own	255	2	4104	255.6	718.07	-34007	2-16½	X	WCG-T98	4 Tim E-100+	H.F.	H. 2-6	Tim 30000	L74IVH	TD
17 R60...	F-22-8	130	185	4600	5115	25	20	8.25	20	Own	255	2	4104	255.6	718.07	-34007	2-16½	X	WCG-T98	4 Tim E-100+	H.F.	H. 2-6	Tim 30000	L74IVH	TD
18 R60...	F-22-9	130	185	4600	5115	25	20	8.25	20	Own	255	2	4104	255.6	718.07	-34007	2-16½	X	WCG-T98	4 Tim E-100+	H.F.	H. 2-6	Tim 30000	L74IVH	TD
19 R60...	F-56-1	130	185	4600	5115	25	20	8.25	20	Own	255	2	4104	255.6	718.07	-34007	2-16½	X	WCG-T98	4 Tim E-100+	H.F.	H. 2-6	Tim 30000	L74IVH	TD
20 R60...	F-56-2	130	185	4600	5115	25	20	8.25	20	Own	255	2	4104	255.6	718.07	-34007	2-16½	X	WCG-T98	4 Tim E-100+	H.F.	H. 2-6	Tim 30000	L74IVH	TD
21 R60...	F-56-3	130	185	4600	5115	25	20	8.25	20	Own	255	2	4104	255.6	718.07	-34007	2-16½	X	WCG-T98	4 Tim E-100+	H.F.	H. 2-6	Tim 30000	L74IVH	TD
22 R60...	F-23-1	130	185	4600	5115	25	20	8.25	20	Own	255	2	4104	255.6	718.07	-34007	2-16½	X	WCG-T98	4 Tim E-100+	H.F.	H. 2-6	Tim 30000	L74IVH	TD
23 R60...	F-23-2	130	185	4600	5115	25	20	8.25	20	Own	255	2	4104	255.6	718.07	-34007	2-16½	X	WCG-T98	4 Tim E-100+	H.F.	H. 2-6	Tim 30000	L74IVH	TD
24 R60...	F-23-3	130	185	4600	5115	25	20	8.25	20	Own	255	2	4104	255.6	718.07	-34007	2-16½	X	WCG-T98	4 Tim E-100+	H.F.	H. 2-6	Tim 30000	L74IVH	TD
25 R60...	F-23-4	130	185	4600	5115	25	20	8.25	20	Own	255	2	4104	255.6	718.07	-34007	2-16½	X	WCG-T98	4 Tim E-100+	H.F.	H. 2-6	Tim 30000	L74IVH	TD
26 R60...	F-23-5	130	185	4600	5115	25	20	8.25	20	Own	255	2	4104	255.6	718.07	-34007	2-16½	X	WCG-T98	4 Tim E-100+	H.F.	H. 2-6	Tim 30000	L74IVH	TD
27 R60...	F-23-6	130	185	4600	5115	25	20	8.25	20	Own	255	2	4104	255.6	718.07	-34007	2-16½	X	WCG-T98	4 Tim E-100+	H.F.	H. 2-6	Tim 30000	L74IVH	TD
28 R60...	F-23-7	130	185	4600	5115	25	20	8.25	20	Own	255	2	4104	255.6	718.07	-34007	2-16½	X	WCG-T98	4 Tim E-100+	H.F.	H. 2-6	Tim 30000	L74IVH	TD
29 R60...	F-23-8	130	185	4600	5115	25	20	8.25	20	Own	255	2	4104	255.6	718.07	-34007	2-16½	X	WCG-T98	4 Tim E-100+	H.F.	H. 2-6	Tim 30000	L74IVH	TD
30 R60...	F-23-9	130	185	4600	5115	25	20	8.25	20	Own	255	2	4104	255.6	718.07	-34007	2-16½	X	WCG-T98	4 Tim E-100+	H.F.	H. 2-6	Tim 30000	L74IVH	TD
31 R60...	A-1900	130	185	4600	5115	25	20	8.25	20	Own	255	2	4104	255.6	718.07	-34007	2-16½	X	WCG-T98	4 Tim E-100+	H.F.	H. 2-6	Tim 30000	L74IVH	TD
32 R60...	A-1901	130	185	4600	5115	25	20	8.25	20	Own	255	2	4104	255.6	718.07	-34007	2-16½	X	WCG-T98	4 Tim E-100+	H.F.	H. 2-6	Tim 30000	L74IVH	TD
33 R60...	A-1902	130	185	4600	5115	25	20	8.25	20	Own	255	2	4104	255.6	718.07	-34007	2-16½	X	WCG-T98	4 Tim E-100+	H.F.	H. 2-6	Tim 30000	L74IVH	TD
34 R60...	A-1903	130	185	4600	5115	25	20	8.25	20	Own	255	2	4104	255.6	718.07	-34007	2-16½	X	WCG-T98	4 Tim E-100+	H.F.	H. 2-6	Tim 30000	L74IVH	TD
35 R60...	A-1904	130	185	4600	5115	25	20	8.25	20	Own	255	2	4104	255.6	718.07	-34007	2-16½	X	WCG-T98	4 Tim E-100+	H.F.	H. 2-6	Tim 30000	L74IVH	TD
36 R60...	A-1905	130	185	4600	5115	25	20	8.25	20	Own	255	2	4104	255.6	718.07	-34007	2-16½	X	WCG-T98	4 Tim E-100+	H.F.	H. 2-6	Tim 30000	L74IVH	TD
37 R60...	A-1906	130	185	4600	5115	25	20	8.25	20	Own	255	2	4104	255.6	718.07	-34007	2-16½	X	WCG-T98	4 Tim E-100+	H.F.	H. 2-6	Tim 30000	L74IVH	TD
38 R60...	A-1907	130	185	4600	5115	25	20	8.25	20	Own	255	2	4104	255.6	718.07	-34007	2-16½	X	WCG-T98	4 Tim E-100+	H.F.	H. 2-6	Tim 30000	L74IVH	TD
39 R60...	A-1908	130	185	4600	5115	25	20	8.25	20	Own	255	2	4104	255.6	718.07	-34007	2-16½	X	WCG-T98	4 Tim E-100+	H.F.	H. 2-6	Tim 30000	L74IVH	TD
40 R60...	A-1909	130	185	4600	5115	25	20	8.25	20	Own	255	2	4104	255.6	718.07	-34007	2-16½	X	WCG-T98	4 Tim E-100+	H.F.	H. 2-6	Tim 30000	L74IVH	TD
41 School bus F-1201	130	185	4600	5115	25	20	8.25	20	Own	255	2	4104	255.6	718.07	-34007	2-16½	X	WCG-T98	4 Tim E-100+	H.F.	H. 2-6	Tim 30000	L74IVH	TD	
42 School bus F-120G	130	185	4600	5115	25	20	8.25	20	Own	255	2	4104	255.6	718.07	-34007	2-16½	X	WCG-T98	4 Tim E-100+	H.F.	H. 2-6	Tim 30000	L74IVH	TD	
43 School bus F-120H	130	185	4600	5115	25	20	8.25	20	Own	255	2	4104	255.6	718.07	-340										



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Centralia, Illinois

It takes Eddie Erbes about a day to convert a truck to Philgas. Why does he take the time and trouble? Eddie tells you frankly: "Philgas runs a truck better and for less money than gasoline or diesel. Per gallon cost is lower—you change oil less—and you cut maintenance cost to rock bottom."

Eddie Erbes knows what he's talking about. He has used LP-Gas as a motor fuel since 1948. Today he supervises the 38 trucks Universal operates on Philgas*. These trucks—pickups, bobtails and over-the-road transports—are in constant service. They average around 300,000 miles before overhaul.

It could well be that Philgas can cut the operating cost of your fleet. Philgas is being used successfully in trucks, buses, taxicabs, construction equipment—wherever internal combustion power is needed. It will cost you nothing to find out how Philgas can help you get better, more economical fleet operation. Write for full information.

CHECK THESE PHILGAS ADVANTAGES

- ✓ Burns completely with no oil dilution—less contamination.
- ✓ Low fuel cost—lowers operating costs.
- ✓ No cylinder wall washing—lower cylinder wear.
- ✓ Longer ring and valve life.
- ✓ Cuts maintenance—thousands of miles more before overhaul.
- ✓ No knocking—no smelly fumes or exhaust smoke.

Put Philgas to work for you. You can use it to advantage no matter what type of fleet you operate. Write for complete details.



*Philgas is the Phillips Petroleum Company trademark for its high quality LP-Gas or bottled gas (butane-propane).

PHILLIPS PETROLEUM COMPANY

SALES DEPARTMENT, Bartlesville, Oklahoma

Offices In:

AMARILLO, TEX.—First Nat'l Bank Bldg.
ATLANTA, GA.—11th Street Bldg.
CHICAGO, ILL.—7 South Dearborn St.
DENVER, COLO.—1375 Kearney Ave.
DES MOINES, IOWA—606 Hubbell Bldg.

HOUSTON, TEX.—1020 E. Holcombe Blvd.
INDIANAPOLIS, IND.—1112 N. Pennsylvania St.
KANSAS CITY, MO.—500 West 39th St.
MINNEAPOLIS, MINN.—212 Sixth St. South
NEW YORK, N. Y.—80 Broadway
OMAHA, NEB.—WOW Building

RALEIGH, N. C.—804 St. Mary's Ave.
ST. LOUIS, MO.—4251 Lindell Blvd.
TAMPA, FLA.—1214 South Dale Mabry
TULSA, OKLA.—1708 Utica Square
WICHITA, KAN.—501 KFH Building

7.5 (D)	149	220	35000	125001.00	22	11.00	22	Cum HB800	6-4 1/2	672 17	500 150	-7-4 1/2	Y Fu 5C650	S2	R ** -7 84	Tim FD900	W84B	
7.4 (White-Freightliner) (C.O.E.)	114	120	11300	10.00	22	11.00	22	Cum NHB	6-5 1/2	743 13	575 200	-21007-4 1/2	Y Fu 4A86	8 Tim R-350	SF 9	H4 33-6-67	Tim FE900	W84B
7.4 (W-42)	114	120	11300	10.00	22	11.00	22							TD	72	10 1/2 x 14	DL	OIA

For Key to References and Abbreviations See Page 105

Line Number	MAKE MODEL	Chassis List Price	WHEEL BASE		ENGINE DETAILS				TRANS- MISSION		REAR AXLE		FRONT AXLE		BRAKES		FRAME			
			D-dual rear Single rear	Front/rear Size-unit	Model and Series	Stroke in. and Bores, in.	Displace- ment cu. in.	Comp., Brake P.M. Torque lb.-ft.	Model and Series	Overdrive Standard	Model and Series									
1	Bleiderman .PM62	162	162	40000	150/40 10/00/20D	11.00/20	Cum NHB600	6-5-4 x6	743/16	53/2000-2100/7-4-5x13H	YFu R950C	10 Tim SW3458PWF	L	** -6-17 Tim FE900	W60IA	1062/1469G	TD	62	10-3x4	
2	Coleman G-55	150	160	34000	12000/11.00/20	12.00/20	Budia LO-525	6-4-3 x5	52/6	7400/150-2200/7-3x74	YFu 5A650	5OW-289-CM	2	** -9-72 OW	TWIA	568/9214	FD	84	10-3x3	
3	G-55	150	160	34000	12000/11.00/20	12.00/20	Wau 140C72	6-4-3 x5	55/6	4451/188-2600/7-3x74	YFu 4A66	4OW-289-CM	2	** -9-72 OW	TWIA	568/921	FD	84	10-3x3	
4	(D) D-55	150	160	34000	13000/11.00/20	12.00/20	Cum HBB600	6-4-3 x5	56/6	4500/150-1800/7-3x74	YFu 5A650	5OW-289-CM	2	** -9-72 OW	TWIA	568/921	FD	84	10-3x3	
5	Dodge C-1-PW6	1965	126	9500	3950/7-50/105	103-3600/4-2544/8	HerC-QXLDD86	6-3 1/4 x4	59/7	191/103-3600/4-2544/8	YNP-S9960	4 Own T-137	Hyp F	YH-5-83 own T-137	OAH	210 310 CO PX	52 1/2 A x6A	C		
6	F-FWD	LD	136	184	15500	4550/6.50/20D	9.00/20	Wau QXLDD86	6-3 1/4 x4	52/6	236/6 71/100	YWG T9A	8 Tim S3547	SF	H-67-** Tim F30	T4IHY	324 518A	T1	72	6x3x4
7	LD	141	184	15500	4550/6.50/20D	9.00/20	Wau QXLDD86	6-3 1/4 x4	52/6	236/6 51/100	YWG T9A	8 Tim S3547	SF	H-67-** Tim F30	T4IHY	324 518A	T1	72	6x3x4	
8	HA	142	184	15500	4550/6.50/20D	9.00/20	Wau QXLDD86	6-3 1/4 x4	52/6	236/6 51/100	YWG T9A	8 Tim S3547	SF	H-67-** Tim F30	T4IHY	324 518A	T1	72	6x3x4	
9	HA	142	184	15500	4550/6.50/20D	9.00/20	Wau QXLDD86	6-3 1/4 x4	52/6	236/6 51/100	YWG T9A	8 Tim S3547	SF	H-67-** Tim F30	T4IHY	324 518A	T1	72	6x3x4	
10	HA	132	168	25000	4500/9/20D	10.00/20	Wau 195GKA	6-4-3 x5	64/4	4045/6 291/130-3000/7-2-56/12/15	YOwn H	5 Own H	SF	H-66-9-01 own H	W64IHV	419 708A	T4	67-** 9x3x4		
11	HA	132	168	25000	4500/9/20D	10.00/20	Wau 195GKA	6-4-3 x5	64/4	4045/6 291/130-3000/7-2-56/12/15	YOwn H	5 Own H	SF	H-66-9-01 own H	W64IHV	419 708A	T4	67-** 9x3x4		
12	HA	132	168	25000	4500/9/20D	10.00/20	Wau 195GKA	6-4-3 x5	64/4	4045/6 291/130-3000/7-2-56/12/15	YOwn H	5 Own H	SF	H-66-9-01 own H	W64IHV	419 708A	T4	67-** 9x3x4		
13	(D) H-RV	220	144	25000	4500/9/20D	10.00/20	GMC 3-71	6-3 1/4 x4	52/6	236/6 51/100	YOwn H	5 Own H	SF	H-66-9-01 own H	W64IHV	419 708A	T4	67-** 9x3x4		
14	H-RV	220	144	25000	4500/9/20D	10.00/20	GMC 3-71	6-3 1/4 x4	52/6	236/6 51/100	YOwn H	5 Own H	SF	H-66-9-01 own H	W64IHV	419 708A	T4	67-** 9x3x4		
15	H-RV	262	144	25000	4500/9/20D	10.00/20	GMC 4-71	6-3 1/4 x5	52/6	236/6 51/100	YOwn H	5 Own H	SF	H-66-9-01 own H	W64IHV	419 708A	T4	67-** 9x3x4		
16	(D) H-RV	262	144	25000	4500/9/20D	10.00/20	GMC 4-71	6-3 1/4 x5	52/6	236/6 51/100	YOwn H	5 Own H	SF	H-66-9-01 own H	W64IHV	419 708A	T4	67-** 9x3x4		
17	H-RV	262	144	25000	4500/9/20D	10.00/20	GMC 4-71	6-3 1/4 x5	52/6	236/6 51/100	YOwn H	5 Own H	SF	H-66-9-01 own H	W64IHV	419 708A	T4	67-** 9x3x4		
18	H-GV	154	154	25000	4500/9/20D	10.00/20	Wau MZA	6-4-3 x5	52/6	236/6 51/100	YOwn H	5 Own H	SF	H-66-9-01 own H	W64IHV	419 708A	T4	67-** 9x3x4		
19	H-GV	154	154	25000	4500/9/20D	10.00/20	Wau MZA	6-4-3 x5	52/6	236/6 51/100	YOwn H	5 Own H	SF	H-66-9-01 own H	W64IHV	419 708A	T4	67-** 9x3x4		
20	(D) M262	154	154	25000	4500/9/20D	10.00/20	GMC 4-71	6-3 1/4 x5	52/6	236/6 51/100	YOwn H	5 Own H	SF	H-66-9-01 own H	W64IHV	419 708A	T4	67-** 9x3x4		
21	M262	154	154	25000	4500/9/20D	10.00/20	GMC 4-71	6-3 1/4 x5	52/6	236/6 51/100	YOwn H	5 Own H	SF	H-66-9-01 own H	W64IHV	419 708A	T4	67-** 9x3x4		
22	T285	139	184	25000	4500/9/20D	10.00/20	Wau 140C72	6-3 1/4 x5	52/6	236/6 51/100	YOwn H	5 Own H	SF	H-66-9-01 own H	W64IHV	419 708A	T4	67-** 9x3x4		
23	T286	139	184	25000	4500/9/20D	10.00/20	Wau 140C72	6-3 1/4 x5	52/6	236/6 51/100	YOwn H	5 Own H	SF	H-66-9-01 own H	W64IHV	419 708A	T4	67-** 9x3x4		
24	(D) T288D	139	184	25000	4500/9/20D	10.00/20	Wau 140C72	6-3 1/4 x5	52/6	236/6 51/100	YOwn H	5 Own H	SF	H-66-9-01 own H	W64IHV	419 708A	T4	67-** 9x3x4		
25	T288D	139	184	25000	4500/9/20D	10.00/20	Wau 140C72	6-3 1/4 x5	52/6	236/6 51/100	YOwn H	5 Own H	SF	H-66-9-01 own H	W64IHV	419 708A	T4	67-** 9x3x4		
26	S-U	150	150	25000	4500/9/20D	10.00/20	Wau 140C72	6-3 1/4 x5	52/6	236/6 51/100	YOwn H	5 Own H	SF	H-66-9-01 own H	W64IHV	419 708A	T4	67-** 9x3x4		
27	S-U	150	150	25000	4500/9/20D	10.00/20	Wau 140C72	6-3 1/4 x5	52/6	236/6 51/100	YOwn H	5 Own H	SF	H-66-9-01 own H	W64IHV	419 708A	T4	67-** 9x3x4		
28	V-U	150	150	25000	4500/9/20D	10.00/20	Wau 140C72	6-3 1/4 x5	52/6	236/6 51/100	YOwn H	5 Own H	SF	H-66-9-01 own H	W64IHV	419 708A	T4	67-** 9x3x4		
29	Y-U	150	150	25000	4500/9/20D	10.00/20	Wau 140C72	6-3 1/4 x5	52/6	236/6 51/100	YOwn H	5 Own H	SF	H-66-9-01 own H	W64IHV	419 708A	T4	67-** 9x3x4		
30	Y-U	150	150	25000	4500/9/20D	10.00/20	Wau 140C72	6-3 1/4 x5	52/6	236/6 51/100	YOwn H	5 Own H	SF	H-66-9-01 own H	W64IHV	419 708A	T4	67-** 9x3x4		
31	Ru*	150	150	25000	4500/9/20D	10.00/20	Wau 140C72	6-3 1/4 x5	52/6	236/6 51/100	YOwn H	5 Own H	SF	H-66-9-01 own H	W64IHV	419 708A	T4	67-** 9x3x4		
32	Ru*	150	150	25000	4500/9/20D	10.00/20	Wau 140C72	6-3 1/4 x5	52/6	236/6 51/100	YOwn H	5 Own H	SF	H-66-9-01 own H	W64IHV	419 708A	T4	67-** 9x3x4		
33	323	150	180	32000	4500/10/20D	10.00/20	Wau 140C72	6-3 1/4 x5	52/6	236/6 51/100	YOwn H	5 Own H	SF	H-66-9-01 own H	W64IHV	419 708A	T4	67-** 9x3x4		
34	324	150	180	32000	4500/10/20D	10.00/20	Wau 140C72	6-3 1/4 x5	52/6	236/6 51/100	YOwn H	5 Own H	SF	H-66-9-01 own H	W64IHV	419 708A	T4	67-** 9x3x4		
35	(D) 324D	150	180	32000	4500/10/20D	10.00/20	Wau 140C72	6-3 1/4 x5	52/6	236/6 51/100	YOwn H	5 Own H	SF	H-66-9-01 own H	W64IHV	419 708A	T4	67-** 9x3x4		
36	324D	150	180	32000	4500/10/20D	10.00/20	Wau 140C72	6-3 1/4 x5	52/6	236/6 51/100	YOwn H	5 Own H	SF	H-66-9-01 own H	W64IHV	419 708A	T4	67-** 9x3x4		
37	ZU	150	182	34000	4500/13.70/20D	10.00/20	GMC 4-71	6-4-3 x5	52/6	236/6 51/100	YOwn H	5 Own H	SF	H-66-9-01 own H	W64IHV	419 708A	T4	67-** 9x3x4		
38	ZU	150	182	34000	4500/13.70/20D	10.00/20	GMC 4-71	6-4-3 x5	52/6	236/6 51/100	YOwn H	5 Own H	SF	H-66-9-01 own H	W64IHV	419 708A	T4	67-** 9x3x4		
39	365	150	182	34000	4500/13.70/20D	10.00/20	GMC 4-71	6-4-3 x5	52/6	236/6 51/100	YOwn H	5 Own H	SF	H-66-9-01 own H	W64IHV	419 708A	T4	67-** 9x3x4		
40	(D) 368D	150	182	34000	4500/13.70/20D	10.00/20	GMC 4-71	6-4-3 x5	52/6	236/6 51/100	YOwn H	5 Own H	SF	H-66-9-01 own H	W64IHV	419 708A	T4	67-** 9x3x4		
41	M71D	150	180	34000	4500/13.70/20D	10.00/20	GMC 4-71	6-4-3 x5	52/6	236/6 51/100	YOwn H	5 Own H	SF	H-66-9-01 own H	W64IHV	419 708A	T4	67-** 9x3x4		
42	(D) M71D	150	180	34000	4500/13.70/20D	10.00/20	GMC 4-71	6-4-3 x5	52/6	236/6 51/100	YOwn H	5 Own H	SF	H-66-9-01 own H	W64IHV	419 708A	T4	67-** 9x3x4		
43	M71D	150	180	34000	4500/13.70/20D	10.00/20	GMC 4-71	6-4-3 x5	52/6	236/6 51/100	YOwn H	5 Own H	SF	H-66-9-01 own H	W64IHV	419 708A	T4	67-** 9x3x4		
44	408	150	180	34000	4500/13.70/20D	10.00/20	GMC 4-71	6-4-3 x5	52/6	236/6 51/100	YOwn H	5 Own H	SF	H-66-9-01 own H	W64IHV	419 708A	T4	67-** 9x3x4		
45	(D) 408D	150	180	34000	4500/13.70/20D	10.00/20	GMC 4-71	6-4-3 x5	52/6	236/6 51/100	YOwn H	5 Own H	SF	H-66-9-01 own H	W64IHV	419 708A	T4	67-** 9x3x4		
46	408D	150	180	34000	4500/13.70/20D	10.00/20	GMC 4-71	6-4-3 x5	52/6	236/6 51/100	YOwn H	5 Own H	SF	H-66-9-01 own H	W64IHV	419 708A	T4	67-** 9x3x4		
47	M10																			



For Key to References and Abbreviations See Page 106

(1) The Hastings torsional is a compression ring that seats right now. Its torsional action brings it into a quick seat and perfect wall bearing in any cylinder—tapered, out-of-round or re-bored.

(2) The Hastings Steel-Vent is an oil ring that stops oil-pumping immediately. It's a *soft pressure* ring with the light inner-spring developed by Hastings. It delivers the extra lubrication

that older engines must have—and with complete oil control and economy.

Here are two top *performers* in the same "Motor Engineered" set . . . built by replacement ring specialists.

You don't have to worry about cylinder scuffing and slow-seating when you install Hastings Steel-Vent sets. You get positive, quick performance every time.

HASTINGS MANUFACTURING COMPANY, HASTINGS, MICHIGAN • HASTINGS LTD., TORONTO



HASTINGS

Tough on oil-pumping • Gentle on cylinder walls

STEEL-VENT PISTON RINGS

Chrome Faced for Heavy-Duty Service

Line Number	Make and Model	Crosses Last Price	Wheel-base	Tire Sizes		Engine Details		Transmission		Front Axle		Rear Axle		Brakes		Frame			
				D-dual rear	S-single rear	Main Bearings	Model	Powerd Speeds	Model	Model	Model	Service	Drum Area	Linings	Brake Drum	Hand Location	CA Dimensions (Min. Std. W. B.)	Side Dimensions	
Mar-Het - Cont'd.																			
1	CM904	192	192	28000	8210/10.00/20D	11.00/20	Ford	Y Ford	10 Ford	H	H	SB	H	H	SB	59.33	59.33		
2	MH-610	16	156	28000	8210/10.00/20D	11.00/20	Ford	Y Ford	10 Ford	H	H	H	H	H	H	60	60		
3	MH-615	169	193	24000	9347/10.00/20D	11.00/20	Her WXLC3	Y Her WXLC3	10 Her WXLC3	H	H	H	H	H	H	59.33	59.33		
4	MH-620	169	193	24000	9347/10.00/20D	11.00/20	Her RXLC3	Y Her RXLC3	10 Her RXLC3	H	H	H	H	H	H	59.33	59.33		
5	MH-625	169	193	26000	9105/11.00/20D	12.00/20	Her RXLC	Y Her RXLC	10 Her RXLC	H	H	H	H	H	H	59.33	59.33		
6	MH-630	169	193	26000	9111/11.00/20D	12.00/20	Her RXLDH	Y Her RXLDH	10 Her RXLDH	H	H	H	H	H	H	59.33	59.33		
7	NAPCO Power Pak	3653	3653	125	60000	33000/10.00/15	7.50/17	C-Thrift-Mas	6-3x3 H	2286/17	2367/12	3700/4	**	**	8 Chevy.	51.12	51.12		
8	(C)	4153	4153	137	60000	4945/5.50/20D	7.50/20D	C-Load-Mas	6-3x3 H	2367/12	2367/12	3700/4	**	**	8 Chevy.	51.12	51.12		
9	(C)	4153	4153	137	60000	5095/5.50/20D	7.50/20D	C-Load-Mas	6-3x3 H	2367/12	2367/12	3700/4	**	**	8 Chevy.	51.12	51.12		
10	(C)	6153	6153	137	15700	5107/5.50/20D	8.25/20D	C-Job-Mas	6-3x3 H	2617/12	2220/12	3500/4	**	**	8 Chevy.	51.12	51.12		
11	(C)	6153	6153	137	15700	5107/5.50/20D	8.25/20D	C-Job-Mas	6-3x3 H	2617/12	2220/12	3500/4	**	**	8 Chevy.	51.12	51.12		
12	(C)	6153	6153	137	15700	5107/5.50/20D	8.25/20D	C-Job-Mas	6-3x3 H	2617/12	2220/12	3500/4	**	**	8 Chevy.	51.12	51.12		
13	(C)	6153	6153	137	15700	5107/5.50/20D	8.25/20D	C-Job-Mas	6-3x3 H	2617/12	2220/12	3500/4	**	**	8 Chevy.	51.12	51.12		
14	(C)	5453	5453	138	15700	5107/5.50/20D	8.25/20D	C-Job-Mas	6-3x3 H	2617/12	2220/12	3500/4	**	**	8 Chevy.	51.12	51.12		
15	(C)	5753	5753	138	15700	5107/5.50/20D	8.25/20D	C-Job-Mas	6-3x3 H	2617/12	2220/12	3500/4	**	**	8 Chevy.	51.12	51.12		
16	Oshkosh	W-214	W-214	150	205	22800	9025/9.00/20D	9.00/20	Con B6457	6-1x4 H	3228/17	2860/7	2133/4	5 Own W-214	5 Own W-214	5 Own W-214	48.4	48.4	
17		W-314	W-314	150	205	28000	9030/9.00/20D	10.00/20	Con B6457	6-1x4 H	3228/17	2860/7	2133/4	5 Own W-314	5 Own W-314	5 Own W-314	48.4	48.4	
18		W-714	W-714	150	205	28000	9030/9.00/20D	10.00/20	Con B6457	6-1x4 H	3228/17	2860/7	2133/4	5 Own W-714	5 Own W-714	5 Own W-714	48.4	48.4	
19		W-710	W-710	150	205	28000	9030/9.00/20D	10.00/20	Con B6457	6-1x4 H	3228/17	2860/7	2133/4	5 Own W-710	5 Own W-710	5 Own W-710	48.4	48.4	
20		W-710-L-C	W-710-L-C	150	205	28000	9030/9.00/20D	10.00/20	Con B6457	6-1x4 H	3228/17	2860/7	2133/4	5 Own W-710	5 Own W-710	5 Own W-710	48.4	48.4	
21		W-710-L-C	W-710-L-C	150	205	28000	9030/9.00/20D	10.00/20	Con B6457	6-1x4 H	3228/17	2860/7	2133/4	5 Own W-710	5 Own W-710	5 Own W-710	48.4	48.4	
22		W-715	W-715	150	205	28000	9030/9.00/20D	10.00/20	Con B6457	6-1x4 H	3228/17	2860/7	2133/4	5 Own W-715	5 Own W-715	5 Own W-715	48.4	48.4	
23	(D)	W-814	W-814	150	205	36000	14000/1.00/20D	12.00/20	Con R6572	6-1x5 H	4842/18	2600/7	3114/2	5 Own W-814	5 Own W-814	5 Own W-814	48.4	48.4	
24		W-815	W-815	150	205	36000	14000/1.00/20D	12.00/20	Con R6572	6-1x5 H	4842/18	2600/7	3114/2	5 Own W-815	5 Own W-815	5 Own W-815	48.4	48.4	
25		W-824	W-824	150	205	36000	14000/1.00/20D	12.00/20	Con R6572	6-1x5 H	4842/18	2600/7	3114/2	5 Own W-824	5 Own W-824	5 Own W-824	48.4	48.4	
26		W-825	W-825	150	205	36000	14000/1.00/20D	12.00/20	Con R6572	6-1x5 H	4842/18	2600/7	3114/2	5 Own W-825	5 Own W-825	5 Own W-825	48.4	48.4	
27		W-816	W-816	150	205	36000	14000/1.00/20D	12.00/20	Con R6572	6-1x5 H	4842/18	2600/7	3114/2	5 Own W-816	5 Own W-816	5 Own W-816	48.4	48.4	
28		W-816	W-816	150	205	36000	14000/1.00/20D	12.00/20	Con R6572	6-1x5 H	4842/18	2600/7	3114/2	5 Own W-816	5 Own W-816	5 Own W-816	48.4	48.4	
29		W-817	W-817	150	205	36000	14000/1.00/20D	12.00/20	Con R6572	6-1x5 H	4842/18	2600/7	3114/2	5 Own W-817	5 Own W-817	5 Own W-817	48.4	48.4	
30		W-817	W-817	150	205	36000	14000/1.00/20D	12.00/20	Con R6572	6-1x5 H	4842/18	2600/7	3114/2	5 Own W-817	5 Own W-817	5 Own W-817	48.4	48.4	
31		W-817	W-817	150	205	36000	14000/1.00/20D	12.00/20	Con R6572	6-1x5 H	4842/18	2600/7	3114/2	5 Own W-817	5 Own W-817	5 Own W-817	48.4	48.4	
32	(D)	WA-906	WA-906	160	205	40000	14000/1.00/20D	14.00/20S	Wau 145GK	6-3x3 H	743/18	503/18	2000/7	5 Own WA-906	5 Own WA-906	5 Own WA-906	48.4	48.4	
33		WA-906	WA-906	160	205	40000	14000/1.00/20D	14.00/20S	Wau 145GK	6-3x3 H	743/18	503/18	2000/7	5 Own WA-906	5 Own WA-906	5 Own WA-906	48.4	48.4	
34		WA-906	WA-906	160	205	40000	14000/1.00/20D	14.00/20S	Wau 145GK	6-3x3 H	743/18	503/18	2000/7	5 Own WA-906	5 Own WA-906	5 Own WA-906	48.4	48.4	
35		WA-906	WA-906	160	205	40000	14000/1.00/20D	14.00/20S	Wau 145GK	6-3x3 H	743/18	503/18	2000/7	5 Own WA-906	5 Own WA-906	5 Own WA-906	48.4	48.4	
36		WA-906	WA-906	160	205	40000	14000/1.00/20D	14.00/20S	Wau 145GK	6-3x3 H	743/18	503/18	2000/7	5 Own WA-906	5 Own WA-906	5 Own WA-906	48.4	48.4	
37	Walter (L.) F.Z.M.	126	150	205	36000	14000/1.00/20S	16.00/20S	Wau 145GK	6-3x5 H	554/18	379/18	2600/7	5 Own FZM	5 Own FZM	5 Own FZM	48.4	48.4		
38	(C)	AGB	AGB	138	162	36000	14000/1.00/20S	16.00/20S	Wau 145GK	6-3x5 H	554/18	379/18	2600/7	5 Own AGB	5 Own AGB	5 Own AGB	48.4	48.4	
39	(C)	AGR	AGR	138	162	42000	14000/1.00/20D	16.00/20D	Wau 145GK	6-3x5 H	554/18	379/18	2600/7	5 Own AGR	5 Own AGR	5 Own AGR	48.4	48.4	
40	(C)	AGR	AGR	138	162	42000	14000/1.00/20D	16.00/20D	Wau 145GK	6-3x5 H	554/18	379/18	2600/7	5 Own AGR	5 Own AGR	5 Own AGR	48.4	48.4	
41	Ward La. Fr. F.D.I.	1377	80	80	35000	*21916/1.00/16S	7.00/16S	Own CJ-3B	6-3x4 H	1346/114	70/4000/7	2-335/5	NWG T90C	36 SpI 44-2	36 SpI 44-2	36 SpI 44-2	48.4	48.4	
42	(D)	475-4-WD	475-4-WD	81	81	35000	*21916/1.00/16S	7.00/16S	Own CJ-3B	6-3x4 H	1346/114	70/4000/7	2-335/5	NWG T90C	36 SpI 44-2	36 SpI 44-2	36 SpI 44-2	48.4	48.4
43	Willys J.P. CJ-3B	1476	1476	81	81	35000	*31509/1.00/22D	11.00/22D	Cont M1513	6-5x5 H	554/18	379/18	2600/7	5 Own CJ-3B	5 Own CJ-3B	5 Own CJ-3B	48.4	48.4	
44		475-4-WD	475-4-WD	81	81	35000	*31509/1.00/22D	11.00/22D	Cont M1513	6-5x5 H	554/18	379/18	2600/7	5 Own CJ-3B	5 Own CJ-3B	5 Own CJ-3B	48.4	48.4	
45		475-4-WD	475-4-WD	81	81	35000	*31509/1.00/22D	11.00/22D	Cont M1513	6-5x5 H	554/18	379/18	2600/7	5 Own CJ-3B	5 Own CJ-3B	5 Own CJ-3B	48.4	48.4	
46		475-4-WD	475-4-WD	81	81	35000	*31509/1.00/22D	11.00/22D	Cont M1513	6-5x5 H	554/18	379/18	2600/7	5 Own CJ-3B	5 Own CJ-3B	5 Own CJ-3B	48.4	48.4	
47	Dodge - Wheel Driven	154	190	40000	12200/10.00/20D	10.00/20	Own T-353	6-4x4 H	4136/13	5343/17	-3200/7	-3x11/24	Y Clia 290V2	5 Tim SD3010	5 Tim SD3010	5 Tim SD3010	48.4	48.4	
48	Duplex	TH6	162	220	30000	1150/10.00/20	9.00/20	Her JXD	6-4x4 H	3206/13	-3000/7	2-312/5	Y FU 5A32	10 Tim SBD1055	10 Tim SBD1055	10 Tim SBD1055	48.4	48.4	
49		TH6	162	220	30000	1150/10.00/20	9.00/20	Her JXD	6-4x4 H	3206/13	-3000/7	2-312/5	Y FU 5A32	10 Tim SBD1055	10 Tim SBD1055	10 Tim SBD1055	48.4	48.4	
50		L6	172	208	30000	1150/10.00/20	9.00/20	Her JXD	6-4x4 H	3206/13	-3000/7	2-312/5	Y FU 5A32	10 Tim SBD1055	10 Tim SBD1055	10 Tim SBD1055	48.4	48.4	
51	F.W.D.	H630G	138 Opt	138 Opt	30000	131509/1.00/20D	10.00/20D	Wau 145GKA</td											



Quality...Service

BOWER **TAPERED AND
STRAIGHT ROLLER BEARINGS**

For Key to References and Abbreviations See Page 195

When you install a Bower tapered or straight roller bearing, you know you are working with a quality product. Original equipment manufacturers depend on this fact.

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Ask your Federal-Mogul Jobber!



FEDERAL-MOGUL SERVICE
Division Federal-Mogul Corporation
DETROIT 13, MICHIGAN

(Turn to Page 116. Please)

Line Number	Make and Model	Chassis List Price	Wheel-Base	Tire Sizes		Engine Details				Transmission		Rear Axle		Front Axle		Brakes		Frame				
				D-dual rear S-single rear		Main Bearings	Cylinders	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brk. P.M.	Torque lb. ft.	Max. Brk. P.M.	Torque lb. ft.	Max. Brk. P.M.	Torque lb. ft.	Max. Brk. P.M.	Torque lb. ft.	Max. Brk. P.M.			
				Front	Rear		Model	Model	Model	Model	Model	Model	Model	Model	Model	Model	Model	Model	Model			
1 F.W.D.—Cont'd	(D) MU-1040D	\$17,100	100.00	22	Cum NEB-600	6-51x6	7316	.555/200	2100/7	14x17	Yful R95C	200Wn 6-23	SP L **	-5.29	Own 22	TP	100	9-13x%	TF			
2	(D) MU-606D	18,400	100.00	22	Cum NEB-600	6-51x6	7316	.555/200	2100/7	14x17	Yful R95C	100Wn M	SP T **	-5.38	Own 22	TP	100	10x3x	CC			
3	(D) MU-606	18,400	100.00	22	Cum NEB-600	6-51x6	7316	.555/200	2100/7	14x17	Yful R95C	100Wn M	SP T **	-5.38	Own 22	TP	100	10x3x	CC			
4	(D) MU-606	18,400	100.00	22	Cum NEB-600	6-51x6	7316	.555/200	2100/7	14x17	Yful R95C	100Wn M	SP T **	-5.38	Own 22	TP	100	10x3x	CC			
5	(D) MU-606	18,400	100.00	22	Cum NEB-600	6-51x6	7316	.555/200	2100/7	14x17	Yful R95C	100Wn M	SP T **	-5.38	Own 22	TP	100	10x3x	CC			
6	(D) MU-606D	18,400	100.00	22	Cum NEB-600	6-51x6	7316	.555/200	2100/7	14x17	Yful R95C	100Wn M	SP T **	-5.38	Own 22	TP	100	10x3x	CC			
7 Kenworth (D) 452	191	255	43000	10.00	20	Cum HRB-600	6-51x6	7316	.540/165	1800/7	14x16	YBL 8241	12T Un200PA++	2F H5.91-9.76	Tim FE900N	100E 1451a	T6	100	9-13x%	TC		
8	(D) 523-IR	190	255	43000	10.00	20	Cum HRB-600	6-51x6	7316	.540/165	1800/7	14x16	YBL 8241	12T Un200PA++	2F H5.91-9.76	Tim FE900N	100E 1451a	T6	100	9-13x%	TC	
9	(D) 523-IR	190	255	43000	10.00	20	Cum HRB-600	6-51x6	7316	.540/165	1800/7	14x16	YBL 8241	12T Un200PA++	2F H5.91-9.76	Tim FE900N	100E 1451a	T6	100	9-13x%	TC	
10	(D) 523-IR	190	255	43000	10.00	20	Cum HRB-600	6-51x6	7316	.540/165	1800/7	14x16	YBL 8241	12T Un200PA++	2F H5.91-9.76	Tim FE900N	100E 1451a	T6	100	9-13x%	TC	
11	(D) 523-IR	190	255	43000	10.00	20	Cum HRB-600	6-51x6	7316	.540/165	1800/7	14x16	YBL 8241	12T Un200PA++	2F H5.91-9.76	Tim FE900N	100E 1451a	T6	100	9-13x%	TC	
12	(D) 523-IR	190	255	43000	10.00	20	Cum HRB-600	6-51x6	7316	.540/165	1800/7	14x16	YBL 8241	12T Un200PA++	2F H5.91-9.76	Tim FE900N	100E 1451a	T6	100	9-13x%	TC	
13	(D) 523-IR	190	255	43000	10.00	20	Cum HRB-600	6-51x6	7316	.540/165	1800/7	14x16	YBL 8241	12T Un200PA++	2F H5.91-9.76	Tim FE900N	100E 1451a	T6	100	9-13x%	TC	
14	(D) 523-IR	190	255	43000	10.00	20	Cum HRB-600	6-51x6	7316	.540/165	1800/7	14x16	YBL 8241	12T Un200PA++	2F H5.91-9.76	Tim FE900N	100E 1451a	T6	100	9-13x%	TC	
15	(D) 523-IR	190	255	43000	10.00	20	Cum HRB-600	6-51x6	7316	.540/165	1800/7	14x16	YBL 8241	12T Un200PA++	2F H5.91-9.76	Tim FE900N	100E 1451a	T6	100	9-13x%	TC	
16	(D) 523-IR	190	255	43000	10.00	20	Cum HRB-600	6-51x6	7316	.540/165	1800/7	14x16	YBL 8241	12T Un200PA++	2F H5.91-9.76	Tim FE900N	100E 1451a	T6	100	9-13x%	TC	
17 Marmon-Herrington M706	156	216	30000	10.00	20	Ford	6-51x6	8362	3.1	2367	2226	38 Yord	10 Ford	Hy H **	-7.20	Own 20	TP	100	10x3x	B		
18	(M) 706	156	216	30000	10.00	20	Ford	6-51x6	8362	3.1	2367	2226	38 Yord	10 Ford	Hy H **	-7.20	Own 20	TP	100	10x3x	B	
19	(M) 706	156	216	30000	10.00	20	Ford	6-51x6	8362	3.1	2367	2226	38 Yord	10 Ford	Hy H **	-7.20	Own 20	TP	100	10x3x	B	
20	(M) 706	156	216	30000	10.00	20	Ford	6-51x6	8362	3.1	2367	2226	38 Yord	10 Ford	Hy H **	-7.20	Own 20	TP	100	10x3x	B	
21	(M) 906	156	216	30000	10.00	20	Ford	6-51x6	8362	3.1	2367	2226	38 Yord	10 Ford	Hy H **	-7.20	Own 20	TP	100	10x3x	B	
22	(CM) 906	144	162	40000	10.00	20	Ford	6-51x6	8362	3.1	2367	2226	38 Yord	10 Ford	Hy H **	-7.20	Own 20	TP	100	10x3x	B	
23	Oshkosh W-824-6X6	178	Opt	45000	12.00	20	Cum NBH600	6-4x5x6	8722	6722	1844/218-2600/9	34x14½	Y Own W-825	5 Tim SFD320	2F L **	-7.2	Own 18-22	TP	110	10x3x	B	
24	Oshkosh W-824-6X6	178	Opt	45000	12.00	20	Cum NBH600	6-4x5x6	8722	6722	1844/218-2600/9	34x14½	Y Own W-825	5 Tim SFD320	2F L **	-7.2	Own 18-22	TP	110	10x3x	B	
25	Oshkosh W-824-6X6	178	Opt	45000	12.00	20	Cum NBH600	6-4x5x6	8722	6722	1844/218-2600/9	34x14½	Y Own W-825	5 Tim SFD320	2F L **	-7.2	Own 18-22	TP	110	10x3x	B	
26	Oshkosh W-824-6X6	178	Opt	45000	12.00	20	Cum NBH600	6-4x5x6	8722	6722	1844/218-2600/9	34x14½	Y Own W-825	5 Tim SFD320	2F L **	-7.2	Own 18-22	TP	110	10x3x	B	
27 Peterbilt (D) 350	190	305	36000	10.00	20	Cum NBH600	6-51x6	74317	500/200	2100/7	14x16	Y Spd 8041	12 Tim SW-3456	WF R6.16-6	80 Tim Fe600DPa	861A	T6	100	10x3x	CT		
28	(D) 360	190	305	36000	10.00	20	Cum NBH600	6-51x6	74317	500/200	2100/7	14x16	Y Spd 8041	12 Tim SW-3456	WF R6.16-6	80 Tim Fe600DPa	861A	T6	100	10x3x	CT	
29	(D) 360	190	305	36000	10.00	20	Cum NBH600	6-51x6	74317	500/200	2100/7	14x16	Y Spd 8041	12 Tim SW-3456	WF R6.16-6	80 Tim Fe600DPa	861A	T6	100	10x3x	CT	
30	(D) 360	190	305	36000	10.00	20	Cum NBH600	6-51x6	74317	500/200	2100/7	14x16	Y Spd 8041	12 Tim SW-3456	WF R6.16-6	80 Tim Fe600DPa	861A	T6	100	10x3x	CT	
31	(D) 360	190	305	36000	10.00	20	Cum NBH600	6-51x6	74317	500/200	2100/7	14x16	Y Spd 8041	12 Tim SW-3456	WF R6.16-6	80 Tim Fe600DPa	861A	T6	100	10x3x	CT	
32	(D) 360	190	305	36000	10.00	20	Cum NBH600	6-51x6	74317	500/200	2100/7	14x16	Y Spd 8041	12 Tim SW-3456	WF R6.16-6	80 Tim Fe600DPa	861A	T6	100	10x3x	CT	
33	(D) 360	190	305	36000	10.00	20	Cum NBH600	6-51x6	74317	500/200	2100/7	14x16	Y Spd 8041	12 Tim SW-3456	WF R6.16-6	80 Tim Fe600DPa	861A	T6	100	10x3x	CT	
34	(D) 360	190	305	36000	10.00	20	Cum NBH600	6-51x6	74317	500/200	2100/7	14x16	Y Spd 8041	12 Tim SW-3456	WF R6.16-6	80 Tim Fe600DPa	861A	T6	100	10x3x	CT	
35 Reo F-226	150	203	42000	99.00	20	Own 3314	6-3x5x6	8316	33116	4264	140-3200/7	2x9 408	Y Chb 205V	5 Tim SLD	F2 T6.41-7	66 Tim FD900	761V	T6	100	10x3x	U	
36	(F-226) M	150	203	42000	99.00	20	Own 3314	6-3x5x6	8316	33116	4264	140-3200/7	2x9 408	Y Chb 205V	5 Tim SLD	F2 T6.41-7	66 Tim FD900	761V	T6	100	10x3x	U
37	(F-226) M	169	200	45000	10.00	20	Con T4427	6-4x5x6	8316	33116	4264	140-3200/7	2x9 408	Y Chb 205V	5 Tim SLD	F2 T6.41-7	66 Tim FD900	761V	T6	100	10x3x	U
38	(F-226) M	150	203	47000	10.00	20	Con T4427	6-4x5x6	8316	33116	4264	140-3200/7	2x9 408	Y Chb 205V	5 Tim SLD	F2 T6.41-7	66 Tim FD900	761V	T6	100	10x3x	U
39	(F-226) M	150	203	47000	10.00	20	Con T4427	6-4x5x6	8316	33116	4264	140-3200/7	2x9 408	Y Chb 205V	5 Tim SLD	F2 T6.41-7	66 Tim FD900	761V	T6	100	10x3x	U
40	(F-226) M	150	203	47000	10.00	20	Con T4427	6-4x5x6	8316	33116	4264	140-3200/7	2x9 408	Y Chb 205V	5 Tim SLD	F2 T6.41-7	66 Tim FD900	761V	T6	100	10x3x	U
41	(F-226) M	150	203	47000	10.00	20	Con T4427	6-4x5x6	8316	33116	4264	140-3200/7	2x9 408	Y Chb 205V	5 Tim SLD	F2 T6.41-7	66 Tim FD900	761V	T6	100	10x3x	U
42	(F-226) M	140	185	40000	10.00	20	Con T4427	6-4x5x6	8316	33116	4264	140-3200/7	2x9 408	Y Chb 205V	5 Tim SLD	F2 T6.41-7	66 Tim FD900	761V	T6	100	10x3x	U
43	(F-226) M	140	185	40000	10.00	20	Con T4427	6-4x5x6	8316	33116	4264	140-3200/7	2x9 408	Y Chb 205V	5 Tim SLD	F2 T6.41-7						



For Key to References and Abbreviations See Page 105

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Spicer

Neoprene Cuts Acid-Tank Painting Costs

Continued from Page 83

ing highly corrosive acids and other chemicals, one would expect them to fail from the inside out. Actually, it happens the other way around. Constant immersion in acid doesn't appear to be nearly as rough on the tank lining as the combination of conditions that at-

tack the coatings from the outside.

Five years ago, Chemical Tank Lines purchased 10 new tankers for around \$9000 apiece; all 10 are now about finished, mainly because of acid eating through from the outside. Judging from current experience, neoprene coat-

ings are expected to add four years of useful life to the tanks. This 80 per cent increase in service life means that the cost of tank deterioration has been reduced from \$1800 to \$1000 per tank per year, for a saving of \$7200 per truck in replacement cost.

Two Neoprene Types

Two different types of neoprene coating are used on Chemical Tank Lines' trucks, both manufactured by Chemical Coatings & Engineering Co., Broomall, Pa. CC&E's black No. 77 two-part system is preferred for the splash area in the middle of the tank; vulcanization accelerator is stirred into the material just prior to use and three coats are applied by brushing. All other metalwork on the tank and trailer receives two coats of gray No. 362 one-part neoprene maintenance paint, applied by spraying; this material is ready for use as it comes in the can.

The accelerated two-part coating is employed in the splash area because it provides a much thicker film per coat than the one-part material. Two-part coating, or brushing cement, also permits control of properties and vulcanization rate through a choice of two different activators: air-cure accelerator, for use under normal conditions; and heat-cure for use where heating apparatus is available. The two may be used interchangeably, and each offers advantages in different situations. Heat-cure, for example, gives a build-up of six to eight miles per coat, as contrasted with 10 mils per coat for air-cure. On the other hand, heat-cure is advantageous for summer use when shop temperature is likely to be high, since it allows more time for application after mixing; air-cure begins to set up in about 40 min. at average room temperature, and the time is shortened as temperature increases.

To Do the Job

Where a trailer is being converted from ordinary acid-resistant paint to a neoprene coating, the surface is first sand-blasted to
(TURN TO PAGE 123, PLEASE)



Model 287 Driver's Seat



Model 230 Driver's Seat



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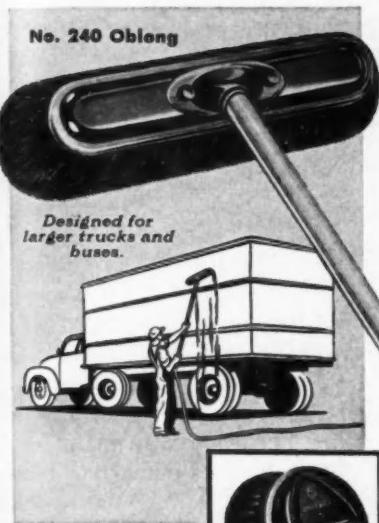
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handle \$12.45 \$11.65 \$10.90 \$10.15

MILWAUKEE DUSTLESS BRUSH CO.
530 North 22nd St., Milwaukee, Wis.

Please ship the following:

Quan.	No.	Item	Price
240	OBLONG SPEEDWASH		
250	ROUND SPEEDWASH		

NAME _____
ADDRESS _____
CITY _____ STATE _____

Acid Tank Painting Costs

Continued from Page 120

remove old paint and take corroded areas down to bright metal. New work, which usually has a thin film of rust when the trailer is delivered, is simply wire-brushed and wiped.

Next, a coat of CC&E No. 107 primer is applied to the entire trailer. It dries in one to four hours, depending upon temperature, humidity, and other factors. Generally, the primer is dry at the starting point by the time the entire coat is on and the brushing cement has been mixed. Since both the primer and the coating materials are solvent solutions, ventilation is recommended and open flames should be kept away from the job.

To prepare the two-part brushing cement for use, eight ounces of accelerator (furnished by the manufacturer) is added for every gallon of coating material; proportions are the same for either air- or heat-cure. The accelerator is yellow, and mixing should be continued until all the color is dispersed.

Work from Top Down

The coating is flowed on like enamel, working from the top down. No attempt should be made to go back over or try to brush it out; excessive brushing or "scrubbing" action makes for an uneven coating and is likely to produce bubbles. If bubbles are seen on inspection between coats, a quick spraying of the special aromatic solvent used in these materials, applied with an ordinary insect-spray gun, will break the bubbles and close up the pinholes.

Application is all a matter of practice — any good painter can make a neat, effective job of it, and amateurs are usually able to pick up the techniques in about a week. Instructions are on the can. The job of protecting an entire trailer takes one man all day, but leaves time for other work while each coat is drying.

END

Please Resume Reading Page 84



One-piece, aircraft-type ring clamp holds top securely. No nuts or bolts to lose or bother with.

Amazing . . . New
750 CUBIC INCH
W.G.B. OIL FILTER
uses FULL SIZE (8 x 15)
cartridge that can be changed
in 3 minutes WITHOUT TOOLS

• **YOU GET** a full size 750 cubic inch oil filter when you use W. G. B. -- because it's made big enough to use a full size (8 x 15) S-11C cartridge. That's why W. G. B. thoroughly cleans more oil faster -- and keeps its color clear longer.

• **NO NUTS AND BOLTS** -- the new W. G. B. Model WD-2-750 cubic inch Clar-O-fier uses a top that's held securely by a clamp, equipped with a single hand tightening device.

• **NO LEAKAGE** -- an "O" ring gasket keeps the oil completely locked-in under any operating pressure.

• **QUICKLY INSTALLED** -- in most instances fits into the brackets used for any 750 cubic inch filter.

• **FOR BEST RESULTS** -- use only the genuine W. G. B. Clar-O-fex Replacement Cartridge (No. S-11C).

APPROVED BY LEADING ENGINE MAKERS

• **REMEMBER** W. G. B. has not -- and will not -- reduce the size of its S-11C (8 x 15) cartridge. Specify the W. G. B. S-11BC cartridge for smaller size, so-called 750 cubic inch oil filters.

• **W. G. B. MAKES REPLACEMENT CARTRIDGES FOR ALL POPULAR MAKES OF FILTERS.**

• **SPECIFY W. G. B. AS ORIGINAL EQUIPMENT OR ORDER FOR REPLACEMENT.**

WRITE FOR COMPLETE DETAILS AND NAME OF NEAREST DISTRIBUTOR

W.G.B. OIL CLARIFIER
INC. KINGSTON, NEW YORK



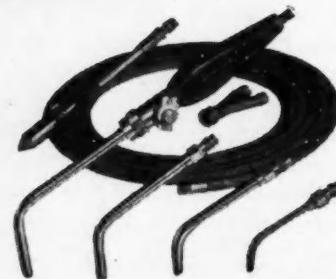
Holes in Floor, Less Weight

State weight limitations have caused considerable trouble for Morrison Steel Co., New Brunswick, N. J. To solve the problem, it replaced plate steel with diamond-shaped expanded metal in its truck beds. This reduced overall weight of the vehicle by as much as one ton, increasing cargo weight proportionately. The truck bed is 4 lb per sq ft grating supplied by Wheeling Corrugating Co., Wheeling, W. Va. The grating is welded to cross members and side railings. The new beds also eliminate a drainage obstacle.

FAST • CLEAN ECONOMICAL



Prest-O-Lite
Trade-Mark
**BODY SOLDERING
OUTFIT**



Outfit (illustrated) comes complete with hose, precision handle, "Y" connection, and interchangeable stems ready for use with standard welding cylinder.

With the four different sized stems and soldering iron in this outfit you can handle any job from the heaviest body soldering down to the smallest spot repairs. Use it as an auxiliary to your standard oxy-acetylene welding and cutting outfit. Just attach the "Y" connection to the outlet of your acetylene regulator and operate both outfits from the same cylinder. The precision torch has a convenient shutoff valve and pilot flame control built into it for economical operation. Ask your local LINDE jobber for a demonstration or write for more details to LINDE AIR PRODUCTS COMPANY, a Division of Union Carbide and Carbon Corporation, 30 E. 42nd St., New York 17, N. Y. In Canada: Dominion Oxygen Company, Division of Union Carbide Canada Limited, Toronto.

GET IT FROM YOUR

LINDE JOBBER



The terms "Prest-O-Lite" and "Linde" are registered trade-marks of Union Carbide and Carbon Corporation.

Series 2 Oil . . .

Continued from Page 81

Oil Use Comparison

Reduced engine wear also means lowered oil consumption. Records for truck No. 263, a 1951 Chevrolet model JP pick-up, tell us that during the first six months of 1954 it travelled 3203 miles. During that time it received its prescribed number of oil changes, and used seven quarts of a special high-detergency oil.

These figures can reasonably be compared to results obtained with vehicle No. 243, a 1948 model FP Chevrolet pick-up at a time when it had the same mileage on it. Between 10,000 and 13,000 miles, truck 243 used 15 quarts of a heavy-duty MIL-0-2104 type oil. And by the time it reached 13,000 miles, its engine had already been rebored and reringed twice.

END

Please Resume Reading Page 82



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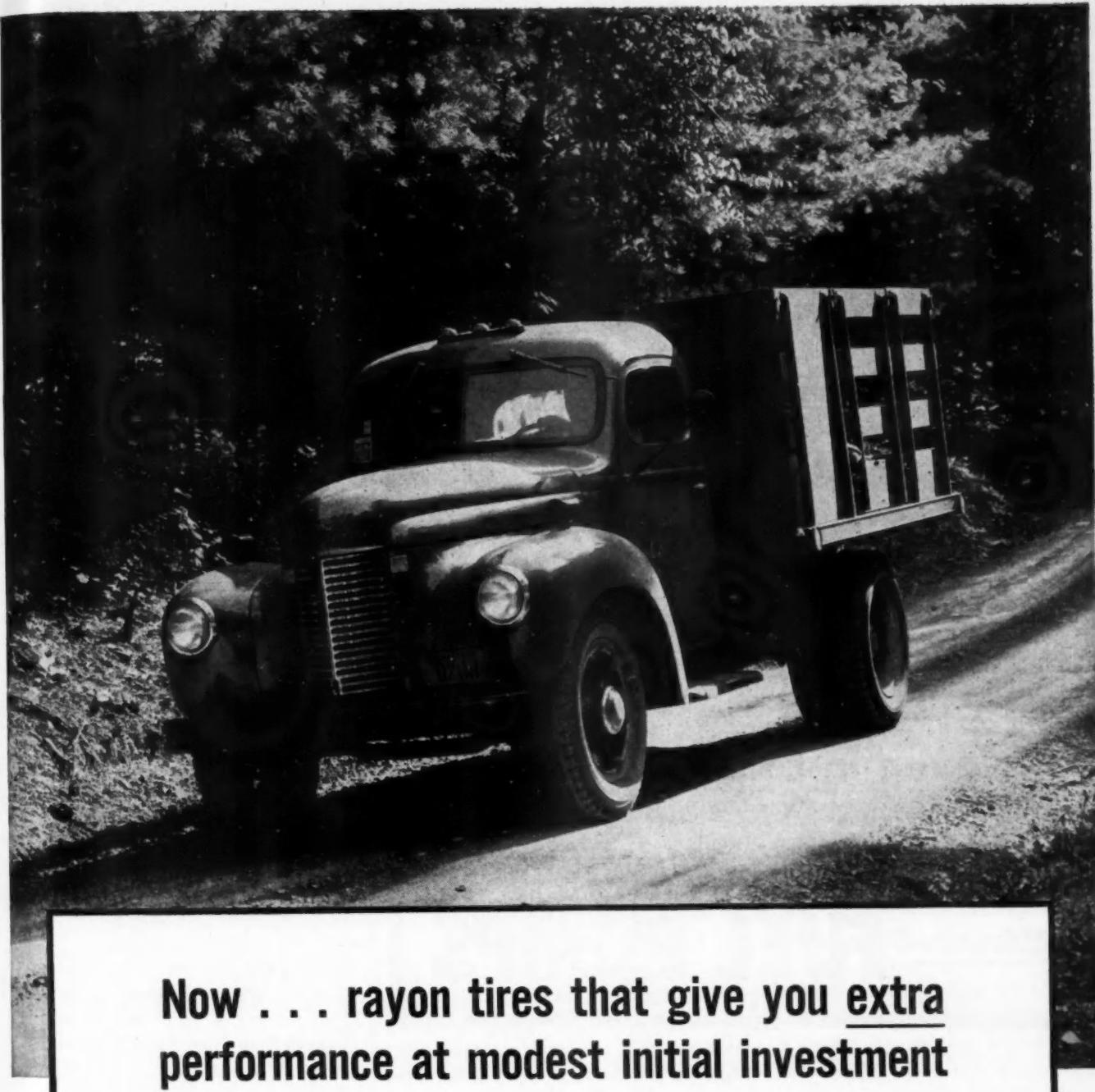
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Now . . . rayon tires that give you extra performance at modest initial investment

Du Pont "Super Cordura" combines two big advantages—high strength and flex resistance—to make possible outstanding tire performance at a modest initial investment.

Super Cordura* High Tenacity Rayon is the best-balanced rayon available for tires. "Super Cordura" is engineered to absorb the terrific

strains of compression flexing that a tire is subjected to every time a wheel revolves. This pays off in greater blowout protection and greater recap possibilities for your tires. And "Super Cordura" tire yarn has higher wet strength than conventional rayon tire yarns . . . to better resist the effects of moisture.

See how you can get superior performance for *your* trucks. You'll find that tires made with new "Super Cordura" are available from a number of leading tire manufacturers. E. I. du Pont de Nemours & Co. (Inc.), Wilmington 98, Delaware.

*REG. U. S. PAT. OFF.



BETTER THINGS FOR BETTER LIVING
... THROUGH CHEMISTRY

DU PONT *Super Cordura* TIRE YARN

ry, 1955

COMMERCIAL CAR JOURNAL, January, 1955

Dynamometer Tests Up Fuel Mileage

Continued from Page 73

conditions as idling, testing of ignition at 1200 rpm, checking for erratic or jumpy vacuum at 2000 rpm and wide open throttle.

On the reverse side of the card there are spaces for generator amperage and voltage at 1200 and 2000 rpm and wide open throttle. Op-

posite these data are spaces for chassis inspection reports.

This equipment has been so effective in showing up trouble, that even new trucks and replacement parts are checked before going into service.

The Winn & Lovett Grocery Co.,

which operates more than 150 food stores in the Southeast, has one of the largest privately owned truck fleets in that area of the country, including a large number of refrigerated trailers.

Breakdown Critical

Before the dynamometer and flow meter were installed the food chain was having only a normal amount of trouble from highway breakdowns, but these can prove to be costly, especially if the load happens to be produce or meat and the weather is extremely hot. All too often, the cause of trouble was not easy to locate, resulting in further loss of time. Mechanical diagnosis has cut this lost time materially.

A typical case was a tractor which showed a loss of power within 5 to 15 miles from the central warehouse. A new fuel pump was installed, but the trouble continued. Then the tractor was tested by the dynamometer and flow meter, which showed up quickly that the new fuel pump was also defective. A third fuel pump was put on before the trouble was corrected.

"Without this equipment," says Mr. Abbott, "we would probably have looked elsewhere for the trouble. You wouldn't ordinarily expect a new fuel pump to be defective. We might have wasted a lot of time seeking another cause."

Every Four Weeks

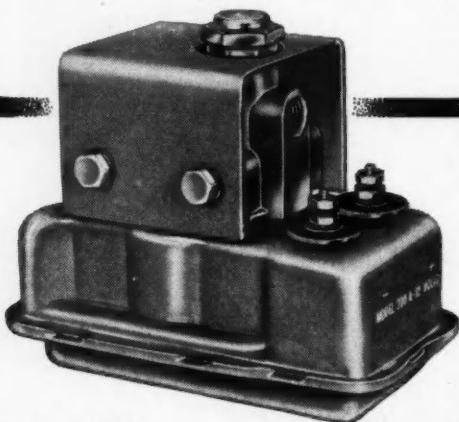
Every tractor is given a regular checkup every four weeks under typical road conditions, oftener if any trouble occurs, but the purpose of the frequent analysis is to prevent trouble, if possible, before it happens. Testing is done at a loaded speed of 45 to 50 mph.

If the flow meter records a gasoline consumption of 6 or 6½ miles per gallon and the driver has been getting only 4 miles per gallon, the mechanical trouble, if any, is quickly located. Often the low gas mileage is due to a heavy-footed driver; if so, he is taught how to extract more mileage from his gasoline. Thus, if through use of this equipment, gasoline mileage is stretched two-tenths of a mile per gallon, the saving is substantial over the year.

END

Please Resume Reading Page 74

Insure
fast
starts



...even in coldest weather!

STEWART-WARNER

Electric FUEL PUMPS

Positive fuel delivery,
less battery drain, less "roadside time"!

With the exclusive Stewart-Warner diaphragm there are no rotating parts, no pistons. Operating independently of the engine, you are assured of positive, abundant flow of gas the moment the ignition switch is turned on. Works only as gas is needed—saves wear—saves battery.

But even more impressive is the money saved in decreased roadside time—longer battery life—improved performance!

Heavy duty construction throughout. Heavy tungsten and platinum switch points combined with booster breaker spring mean no more pitting, arcing, burning. Weatherized finish is bright green baked enamel. Neoprene impregnated gasket seals out rain, road-splash. Protected under all conditions.

Start now to save with Stewart-Warner Electric Fuel Pumps. See your dealer or write:

STEWART-WARNER

Instrument Division, Dept. DD-15
1840 Diversey Parkway, Chicago 14, Illinois

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NEW CHEVROLET TRUCKS

engineered and designed with your profit in mind!

Everything about these new Chevrolet trucks spells **profit!** Their low cost, their stamina and dependability, even their traditionally higher resale value!

COST LESS TO BEGIN WITH

That's right, Chevrolet brings you America's lowest-priced line of trucks—so you save right from the start. The beauty of it is, you go right on saving! With the high compression ratio of Chevrolet's three great engines, you register more miles on the job for each tankful of gas. You can count on fast starts; easy pulling up steep grades. You stay on schedule and keep the profits coming in *on time!*

COST LESS TO MAINTAIN

That's because of the rugged strength and stamina engineered into every new Chevrolet truck. They stay on the job longer (actual owner reports prove it!), cutting your maintenance costs right to the bone. Look over the many advance-design features in the next column and you'll begin to see why.

Your best bet is to talk trucks with your Chevrolet dealer. He'll tell you all you want to know about these Chevrolet profit-makers! . . . Chevrolet Division of General Motors, Detroit 2, Michigan.



CHEVROLET ADVANCE-DESIGN TRUCK FEATURES

THREE GREAT ENGINES—The "Jobmaster 261" engine* for extra heavy hauling. The "Thriftmaster 235" or "Loadmaster 235" for light-, medium- and heavy-duty hauling. **TRUCK HYDRA-MATIC TRANSMISSION***—offered on $\frac{1}{2}$ -, $\frac{3}{4}$ - and 1-ton models. **Heavy-Duty SYNCHRO-MESH TRANSMISSION**—for fast, smooth shifting. **DIAPHRAGM SPRING CLUTCH**—positive-action engagement. **HYPoid REAR AXLE**—for longer life on all models. **TORQUE-ACTION BRAKES**—on all wheels on light- and medium-duty models. **TWIN-ACTION REAR WHEEL BRAKES**—on heavy-duty models. **DUAL-SHOE PARKING BRAKE**—greater holding ability on heavy-duty models. **RIDE CONTROL SEAT***—eliminates back-rubbing. **LARGE UNIT-DESIGNED PICKUP AND PLATFORM STAKE BODIES**—give trip-saving load space. **COMFORTMASTER CAB**—offers greater comfort, convenience and safety. **PANORAMIC WINDSHIELD**—for increased driver vision. **WIDE-BASE WHEELS**—for increased tire mileage. **BALL-GEAR STEERING**—easier, safer handling. **ADVANCE-DESIGN STYLING**—rugged, handsome appearance.

*Optional at extra cost. Ride Control Seat is available on all cabs of $\frac{1}{2}$ - and 2-ton models, standard cabs only in other models. Jobmaster 261" engine available on 2-ton models, truck Hydra-Matic transmission on $\frac{1}{2}$ -, $\frac{3}{4}$ - and 1-ton models.

Key to Better Brake Drum Life

Continued from Page 79

cost however, is high. We do not believe the cost to be justified in the light of the cost involved in the program which we are following in our own brake work.

We feel the multiple rib-type of cast iron drum provides best service in heavy operations when used with

proper friction materials. The multiple-rib design allows for fairly uniform expansion, axle-wise. More even expansion is also found through its thickness. The thinner section between the ribs allows for more rapid heat transfer and, with a rib-design, we have more square

inches of surface area exposed to the air. Air in motion is a fairly effective cooling agent.

The uniform and thin ribs tend to better resist deflection equally across the face of the drum and, this type particularly (which is designed for use without dust shields), resists bell-mouthing exceptionally well. The metal formula for this drum comes about as close as we can get, under present circumstances, to filling the bill for average requirements. I refer to types and amounts of alloys, carbon, etc., used in the iron.

Brake Drum Failure

Drum failures occur as a result of several things:

1. Heat checks will enlarge—eventually cause failure.
2. Cracks can be started as a result of mechanical stresses—caused by brake shoe pressures.
3. Brake drum life can be greatly reduced or failures can occur as a result of using poor quality iron in the manufacturing process.
4. Cracks can be started as a result of rough handling—dropping drums from some distance on to a cement floor, for example.
5. Cracks can also be started through the bolting flange as a result of improper mounting.
6. Poor design can contribute to failure.

Some Typical Failures

Notice the brake drum in Fig. 1. This drum has started to "heat check" quite badly at the surface. This is now a drum that would be very susceptible to bursting, for instance, as a result of the indiscriminate use of the trailer hand control valve in the tractor cab. If the brake shoes are locked in position against a highly heated drum in this condition, for even a few minutes, the drum is apt to crack through its thickness while in the process of cooling off. Regardless, this drum can no longer contribute as much to good braking ability as when newly installed.

At less than 40,000 miles the heat checks in the drum shown in Fig. 2 began to act like a milling machine
(TURN TO PAGE 130, PLEASE)

Be Safe... Turn To -

DIETZ

TURN SIGNALS

3 Great Styles

SINGLE FACE **DOUBLE FACE** **FLUSH MOUNTING**

No. 180 No. 185 No. 190

DELUXE LIGHTS (Chrome Finish Available)

No. 181 No. 186 No. 191

REGULAR

No. 120 No. 125 No. 130

HEAVY DUTY

BURNOUT PROOF SWITCHES

ALSO REAR-BOLT MOUNTING AND COMBINATION STOP, TAIL, & TURN-SIGNAL MODELS

26 Complete Kits—6 v. or 12 v.

R. E. DIETZ COMPANY • SYRACUSE 1, N. Y.

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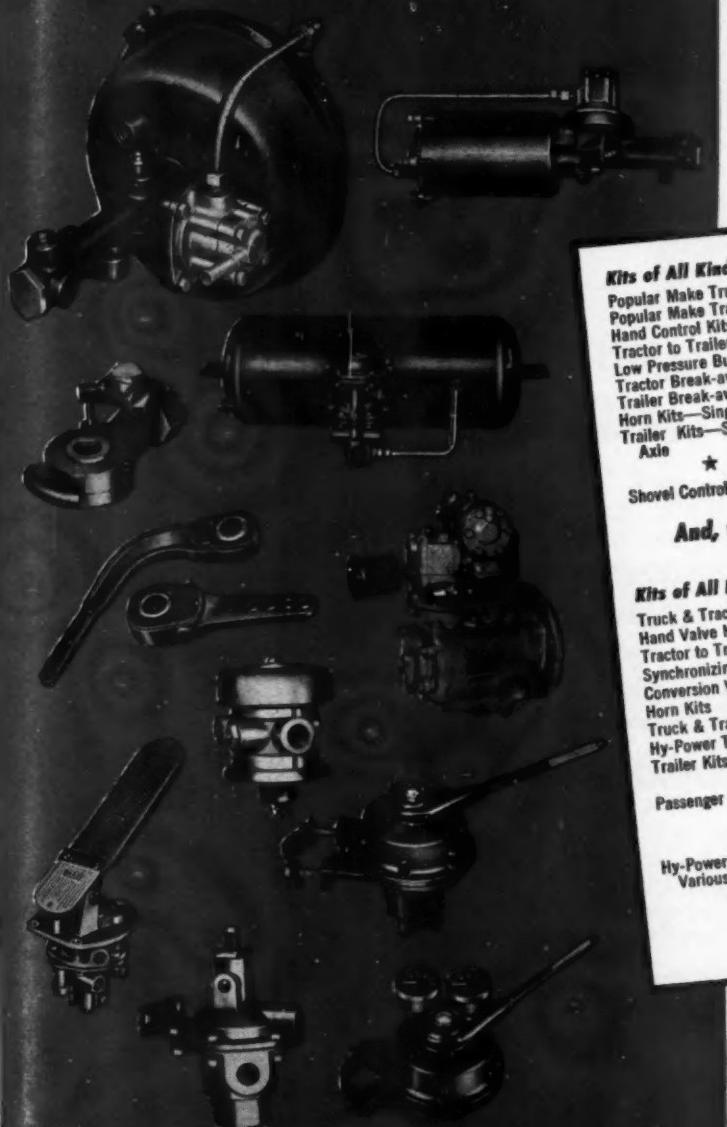
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Everything For Air and Vacuum

BRAKE INSTALLATIONS -

MADE BY

MIDLAND



Kits of All Kinds:

Popular Make Truck Kits
Popular Make Tractor Kits
Hand Control Kits
Tractor to Trailer Outlet Kits
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Kits of All Kinds:

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Horn Kits
Truck & Tractor Tank Kits
Hy-Power Test Kits
Trailer Kits—Single Axle
Dual Axle
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★★

Hy-Power Units For Trucks—
Various Sizes

And, when it comes to vacuum brake equipment, you get all

Hose Couplings
Dummy Coupling & Chain
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Hose Connectors
Hose Fittings
Air Hose—All Sizes
Copper Tubing—in Sizes
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Stop Light Switches
Low Pressure Switches
Check Valves
Exhaust Check Valves

2-Way Check Valves
6-Way Fittings
Air Gauges
Shut-off Cocks
Air Line Cleaners
Air Line Tags Service
Emergency
Terminal Bolt Assemblies
Axe Tees
Miscellaneous Fittings
Compressor Pulleys
Tube and Pipe Fittings
Yokes—Clevises—Pins

Sleek Adjusters
Reservoirs & Brackets
Stop Light Switches
Gauges
Remote Breathers
Shut-off Valves
Hose—All Sizes
Hose Assemblies
Hose Clamps
Hose Springs
Terminal Bolt Assemblies
Female Hose Couplings
Male Hose Couplings
Tube Fittings
Hose Fittings
Pipe Fittings
Rod Eyes, Yokes, Pins

Check your "Yellow Pages" for the Midland distributor
nearest you—or write to the factory direct.

Those Who Know
Power Brakes,
Choose MIDLAND



THE MIDLAND STEEL PRODUCTS CO.
3641 E. Milwaukee Ave. • Detroit 11, Michigan

GO MIDLAND

AND STOP SAFELY!

Better Brake Drum Life

Continued from Page 128

—shaving the brake lining away rapidly, each time brakes are applied. At high temperatures the cracks open wider, causing even greater destruction to the liners. Heat checks are often so deep that they cannot be eliminated by machining and grinding—unless the drum is to be very seriously weak-

ened by the removal of an excess of metal from its diameter.

There is no doubt that frequently the skin of the braking surface of the drum in Fig. 1 was heated to about 1400 to 1500 deg F within a very few seconds after several severe brake applications. Ultimately this heat was transferred through the thickness of the drum to its outside diameter or surface and thence into the air stream. At the outside diameter or surface, the tempera-

tures probably registered around a high of 400 to 500 deg F and in the center about 700 deg F. Under such conditions of uneven and high heats through the thickness of the drum, the skin of the braking surface tends to warp and buckle—then crack open.

Drum Scoring

Scoring of brake drums is also a problem—but not as serious as heat checking. Scoring is generally caused by a mechanical condition. Something sharp, a hard object, between the brake shoe and the drum will cause scoring. Rivet or brake shoe bolt heads can cause serious scoring when liners are not replaced soon enough. In such cases drums can be ruined. Light scoring of brake drums however, does not greatly impair efficiency.

In many instances severe heat checking is the reason for complete failure. Notice that the drum in Fig. 3 is cracked across its braking surface in two places. Heat is the great enemy of friction materials and brake drums. We must find ways to reduce or better control the terrific temperatures involved in braking heavy vehicles—to contribute to better stopping ability.

When new, and in a severe operation, such a drum can be run to destruction in 20,000 miles or less when used with an inferior or improper type of friction material or, it can be made to live four or five times or more longer under identical conditions, when used with a correct friction material which has some affinity for the material in the drum. In our opinion, there is a definite material relationship between drums and liners and they should be carefully matched.

Drum Grinding

Almost perfect contact can be obtained if the operation is completed by using a machine to grind any possible high spots or irregularities from the surface of the brake liners as in Fig. 4. Here again the operation is performed from the spindle to insure concentricity with the spindle. Considering the pressures exerted by the brake shoes on the swept braking surface area of the drums, the importance of these

(TURN TO PAGE 132, PLEASE)

you can cut maintenance costs by saving man-hours

WITH HYPRESSURE
Jenny
STEAM CLEANER

Model "1206"—120 Gals. per hour capacity. One of 80 JENNY types for your needs.

Besides cutting maintenance time and labor expense by cleaning equipment **10 times faster . . . and better**, than any other known method, Series "1200" Hyp pressure JENNY Combination shortens vehicle repairs as much as 40% by removing the muck, dirt and grease that slow mechanics down and run up costs. Combination JENNY cleans motors . . . chassis . . . wheels . . . springs; removes sand and grit from lubrication fittings; reverse flushes complete cool-

ing systems—radiator, motor block and heater; keeps floors . . . walls . . . pits . . . lifts . . . tools and equipment clean for safe, efficient, economical shop operation.

For complete information on how Series "1200" Hyp pressure JENNY Combination can cut maintenance time in your shop by saving man-hours and speeding repairs

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HOMESTEAD VALVE MANUFACTURING COMPANY

"Serving Since 1892"

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THE FIVE ALUMINUM Peterbilt trucks owned by Michigan-California Lumber Co., Camino, California, easily handle log loads up to the legal state limit—take them over rugged mountain roads every day without a failure! According to Mr. A. T. Hildman (*left*), General Manager:



"Our aluminum trucks haul 7000 extra pounds!"

“WE CAN PILE an extra 7000 pounds of logs on our latest Peterbilts with lightweight aluminum parts," says Mr. Hildman, "and still stay within legal load limits.

"Our aluminum transmissions and rear-ends dissipate heat faster and lubricating oils stay cooler. Lubrication is better, engine wear is reduced, and less maintenance is required. On empty runs, tire wear is less because of aluminum's light weight.

"All five of our latest Peterbilts have aluminum truck frames, housings, cabs and wheels. And we were able to reduce our tire size from 11:22 to 10:20.

"We'll continue to specify a maximum number of aluminum parts for all our highway units."

Peterbilt Motors Company of Oakland, California has been giving its customers the benefits of aluminum for nearly twenty years. With the full cooperation of Kaiser Aluminum engineers, Peterbilt continually seeks new ways to include durable, payload-saving aluminum into their truck designs.

Kaiser Aluminum's engineering service is available now to help you overcome design, fabrication or payload problems through the use of light, strong, versatile aluminum.

Contact any sales office listed in your telephone directory. **Kaiser Aluminum & Chemical Sales, Inc.** General Sales Office, Palmolive Bldg., Chicago 11, Illinois; Executive Office, Kaiser Bldg., Oakland 12, California.

Here's what you get when you specify aluminum parts:

- Cooler, more comfortable cabs
- Durability for toughest jobs.
- Easier road handling.
- Less costly part repairs.
- Less engine, tire wear.
- Light weight for extra payload and profits.
- Lower maintenance costs.
- Lower operating costs.

Kaiser Aluminum

setting the pace—in growth, quality and service

most powerful 1/2" drive



The 404 is the lightest, most compact tool in its power and capacity class. Reduces arm fatigue regardless of working position. Actually does all work which previously required two or more tools. Handles all but the largest nuts and bolts on cars and trucks. Fits into small space for extra close-quarter work. Converts immediately into a screw driver, tapper, reamer, wood borer, etc., with standard attachments.

Now, even more than before, mechanics are getting more work done, easier and are making more money by using Ingersoll-Rand Impactools—the leaders in both AIR and ELECTRIC. For an on-the-job demonstration of the new 404 or any of Ingersoll-Rand's complete line of air and electric Impactools for every job, call your Ingersoll-Rand jobber today.

18A-151

Ingersoll-Rand

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Originators of Impactools

AIR & ELECTRIC

Better Brake Drum Life

Continued from Page 130

operations cannot be minimized if best results are to be obtained.

We also recommend that, whenever possible, periodic wheel bearing and brake inspections be made for the purpose of maintaining balanced braking systems throughout the life of a set of brake liners. These inspections should be made as often as necessary. The time intervals should be dictated by the peculiarities or characteristics of the operation.

Machining the Drum

Maintenance men realize, of course, that a perfectly round drum (any make or type) is not necessarily concentric with an axle spindle once it is fastened to a wheel hub properly mounted on the axle spindle. When a drum does not operate concentric with the axle spindle, it should be machined and ground to make it so in order that full contact can be made with the friction materials on the shoe when brakes are applied.

We recommend that new drums be checked for concentricity with the axle spindle to determine if machining and grinding are necessary to insure good liner to drum contact. Usually, in the case of new drums, it is only necessary to cut a few thousandths to insure proper contact.

The amount of metal that can be removed safely from the diameter of the drum depends on several things. We have seen many hundreds of original equipment and replacement drums that could not be salvaged at the time of the first brake relining job because of excessive heat checking. Where heat checking is not too severe in the average drum about sixty thousandths (.0625) out of the wall usually will get us by in pretty good shape with the first oversize of brake liner. However in our opinion, such a drum should only be machined the one time.

Three Machinings Possible

Where combination woven-moulded friction material sets are used from the start with good, heavy-

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duty replacement drums, we can do much better. At the time of the first reline job, we machine slightly over .030 in. from the wall of the drum and use a .030 shim under a standard size block. Actually we have to allow, at the time of the first machining, about ten thousandths over the thirty for drum clearance. This makes a total of .040 in.

At the time of the second reline job this operation is repeated, only then we can, of course, use the first 1/16-in. oversize brake liner. At this stage .070 in. has been machined from the wall. At the time of the third reline job we can again repeat the same performance and use a thirty thousandths shim under the first X oversize liner.

This means that we now use, in many cases, three sets of liners to one set of drums. We machine a total of approximately 0.100 from the wall or 0.200 from the diameter (about 3/16 in.) in three operations. In the absence of conditions of heat checking, our experience indicates it is entirely feasible to expect to be able to do this, in many operations, with very reasonable safety.

Balanced Braking Needed

These figures indicate clearly that two sets of good brake drums and five or six sets of these woven-moulded friction sets could last the life of the average vehicle, figuring about 600,000 miles before turn in or retirement. All of this is predicated however on pursuing a complete program designed to obtain balanced braking.

The brake drum in Fig. 5 has operated with woven-moulded combination liners since it was installed new. In 170,000 miles plus, it was machined once. A little over .030 was machined from its braking surface after 100,786 miles of service. After about 70,000 more miles the drum shows little evidence of additional wear. There are no heat checks in the braking surface and no evidence of scoring.

There are a few so-called hard spots in this drum as you can see but nothing at all serious and, there is no evidence of any surface cracking as a result of these martensite formations. The operator in this

(TURN TO NEXT PAGE, PLEASE)

most powerful 1/2" drive

ELECTRIC

NEW
size 5U

25% more power



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IMPACTOOLS

still the leader in ELECTRIC Impactools

The 25% greater power of the new 5U assures faster, easier handling of your nut running jobs on all modern, high compression, high torque engines. Extra reserve power handles all but the largest nuts and bolts on cars and trucks. Added power speeds up universal joint and angle head jobs. Quickly applied standard attachments permit faster, easier drilling, screw driving, reaming, tapping, wire brushing, hole sawing, etc.

See what this 25% more powerful successor to Ingersoll-Rand's famous 4U Impactool can do for you in terms of time, effort and money saved. For on-your-job proof of the 5U's extra power, or for a demonstration of Ingersoll-Rand's 2U, 8U, and 34U Electric Impactools, call your Ingersoll-Rand jobber today.

18-152

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AIR COMPRESSORS



AIR IMPACTOOLS



ELECTRIC IMPACTOOLS



IMPACUTTERS



TIRE TOOLS



AIR STARTING MOTORS

Originators of Impactools

AIR & ELECTRIC

Better Brake Drum Life

Continued from Page 133

case, kept very close records on this vehicle and advised us that maintenance—as to adjustments, etc.—has been kept to a minimum and the brakes are exceptionally good.

We are now getting these same results in a great many operations. The woven-moulded friction material sets are averaging around 100,-

000 miles and drum life is exceptional. Furthermore we have been able to keep the noise factor under control.

Friction Materials

The field of friction materials involves a science in itself. Vastly different performance characteristics can be obtained by using different makes, mixes and types of friction materials in the same wheel brake, with identical drums under

identical operating conditions. With this understanding, several years ago we at Brake & Electric started experiments on friction materials with a drum which we considered to be of good design, good metal formula and manufactured by a process that insured reasonably constant, top quality. This is a picture of the end result—a combination *woven* and *moulded* friction material set which has helped immeasurably in obtaining better balance in two-shoe, fixed-anchor pin brakes, in the type of service we are discussing.

Specifications for these friction materials call for the best quality obtainable. The moulded material is manufactured by one of the largest brake lining manufacturers. The woven material is produced by a manufacturer who produces densely woven, high friction beltings and blocks for the toughest industrial braking applications in the world. This woven material is formed, treated in a special manner with but one ingredient to a special specification, ground, drilled and countersunk. Dimensions are carefully controlled and checked.

stop shorter



go longer



WITH HOMAN BRAKE DRUMS

Homan Brake Drums give you more stopping power because they are precision machined to insure concentricity and an even braking surface. Made of chrome iron, an alloy which was originally developed for high-temperature use, Homan Drums dissipate heat quickly and minimize checking.

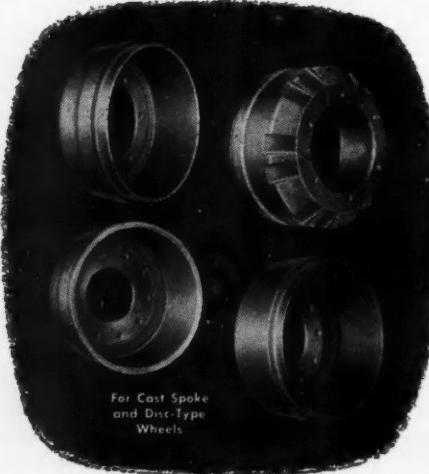
All the features of Homan Drum construction add up to longer brake lining life, longer drum life. Homan Drums are a sound investment in preventive maintenance.

For complete details, write today.

HOMAN
AND COMPANY, INC.

READING • CINCINNATI 15, OHIO
ESTABLISHED 1847

For Fast Dependable Service Ship By Truck Trailer



No Heat Check

We have found that if this material (1) is properly used with good replacement drums, (2) in a braking system in an otherwise balanced condition, (3) where speeds and loads are not too unreasonable, it can now be almost guaranteed that harmful heat checking can be eliminated. At the same time, excellent life factor, good stability and excellent stopping ability are provided. In very many cases of rec-

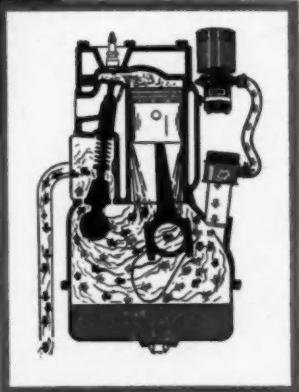
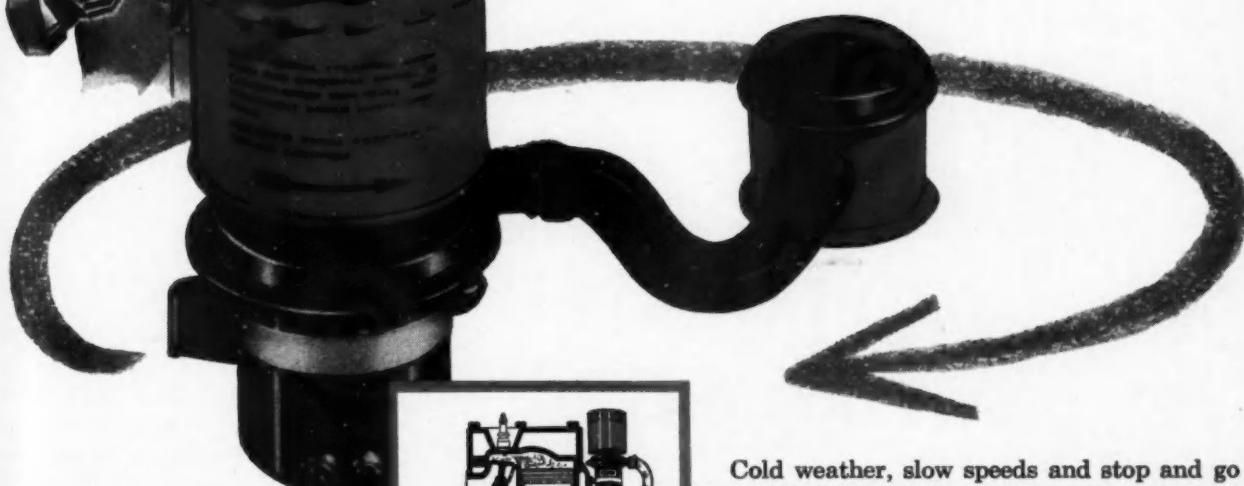
(TURN TO PAGE 136, PLEASE)

Fruehauf 5-Car Carrier



Particularly adapted to West Coast and Canadian operations and other areas with a 60-ft overall length limit, these new car carrier trailers by Fruehauf Trailer Co., Detroit, will carry five medium or small sized cars.

FRAM Stops Engine Killers!



**FRAM Positive Crankcase Ventilator
guards against corrosive blow-by
gases . . . sludge . . . acids!**

Cold weather, slow speeds and stop and go driving build up contaminants that cause excessive wear . . . loss of power . . . oil deterioration! But not with a FRAM Positive Crankcase Ventilator! FRAM Positive Crankcase Ventilators circulate clean, fresh air that carries off corrosive blow-by gases before they can form engine-killing sludge and acids. FRAM Positive Crankcase Ventilators provide a steady flow of air to the crankcase at any vehicle or engine speed. So, get FRAM Positive Crankcase Ventilators for your engines and see the difference in power, performance and profit!

FRAM CARTRIDGES CUT COSTS PER MILE!

Start giving your fleet engines the FRAM clean oil protection that ends excessive wear . . . guards power . . . adds thousands of extra miles between overhauls. FRAM Cartridges are your best bet for longer service at less cost per mile!

FRAM CORPORATION, Providence 16, R. I. FRAM Canada Ltd., Stratford, Ont.



Better Brake Drum Life

Continued from Page 134

ord in tough highway service, we have been successful in eliminating heat checking entirely through the use of this material and by following the maintenance procedures we are outlining.

The woven material is applied fully across the face of the top or secondary shoe in this case, and the

moulded material is applied fully across the face of the bottom or primary shoe. Experience has taught us that by applying these brake liners in this fashion, we get much better performance and longer life than by any other combination we have tried.

Better Brake Balance

These materials tend to complement one another. They achieve a better balance in the foundation

brake assembly, when the brakes are applied. The high friction coefficient of the woven material steps up the performance of the secondary shoe, making that shoe accomplish much more work than would be the case if both shoes were lined with identical materials. As a result of the greatly increased ability of the secondary shoe to carry a fair share of the load, we now get a faster, smoother stop.

As to life factor we find that the woven material on this secondary shoe helps to keep the drum clean and contributes to a cooler operating brake. Since it is always contacting a clean metal braking surface, we know the woven material tends to conduct heat away from the skin of the braking surface of the drum faster than in the case of moulded materials.

The faster stop obtained allows the brake to cool faster after each application. Much of the usual "build up" of heat in the braking system—caused by frequent and long brake applications—is eliminated. As we all know, prolonged heating of brake liners and drums at high temperatures can change original characteristics of the liners beyond recovery or end in complete destruction and, brake drums will distort, heat-check, or fail completely.

Longer Brake Life

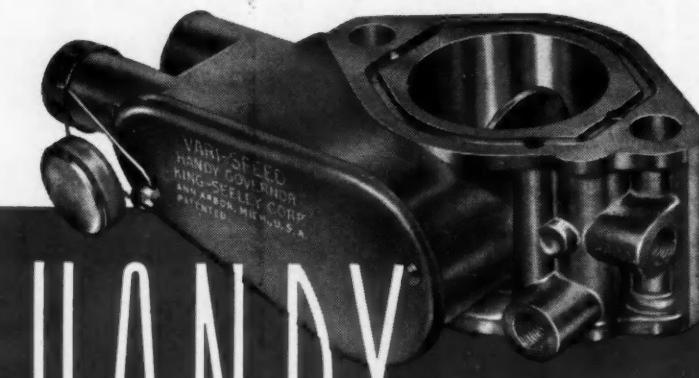
By better control over the heat factors involved, brake drum life is, of course, increased very materially when used with these friction material combinations. Where we have been in a position to specify the make and type of brake drum to be used with these combination liners, many fleet operators and individual owners have reported that both liner and drum life have been more than doubled and heat checking has been eliminated.

Reports thus far coupled with the experience gained in our own shop, often indicate 100,000 miles and more on a set of rear brake liners and drum life factor of more than 250,000 miles. These figures apply to our New England territory and to two-axle, heavy trucks and three-axle combinations running 50,000-60,000 lb, GCW.

END

Please Resume Reading Page 80

COMMERCIAL CAR JOURNAL, January, 1955



Save!

- SAVE GAS
- SAVE OIL
- SAVE TIRES
- SAVE REPAIR COSTS
- SAVE ACCIDENT COSTS
- SAVE INSURANCE COSTS

KING-SEELEY CORPORATION

ANN ARBOR, MICHIGAN
WORLD'S LARGEST MANUFACTURERS
OF AUTOMOTIVE GOVERNORS



244 BUSES...STOP AND GO DRIVING...



UP TO 225,000 MILES BEFORE OVERHAUL



WITH CITIES SERVICE C-300 MOTOR OIL

COMMUNITY TRACTION CO., TOLEDO, OHIO

**CITIES
SERVICE**

... Sparks Team to Top Safety Honors

Continued from Page 68

and finally an approved list of truck stops which specifies all points acceptable for fuel, service, food and lodging on the road. (Company uses the Gulf Motor Carrier Service Plan previously described in CCJ (June, 1953, page 78).

During the training period all de-

tails have been worked out for the purchase of a tractor (either new from a dealer, serviced by the company; or used, from the company itself) and for the assignment of a company owned trailer for which the driver will be completely responsible.

Finally, with his newly-purchased tractor and company - assigned trailer, the driver is given his own load and route but is placed under the supervision of a "leader" for another two weeks. These "leaders" are regular driver-owners who have demonstrated sufficient responsibility to literally lead the newcomer over the company's major but extremely varied routes. Bridge clearances and safe following distances are very important to the new car carrier, and special attention is paid to these phases of operation during these final two weeks. "Leaders" get an extra one cent a mile for their added responsibility.

Safety is a Daily Job

As mentioned before, driver safety meetings take place every day; with at least one full-fledged affair every month. The drivers give their wholehearted cooperation to these meetings.

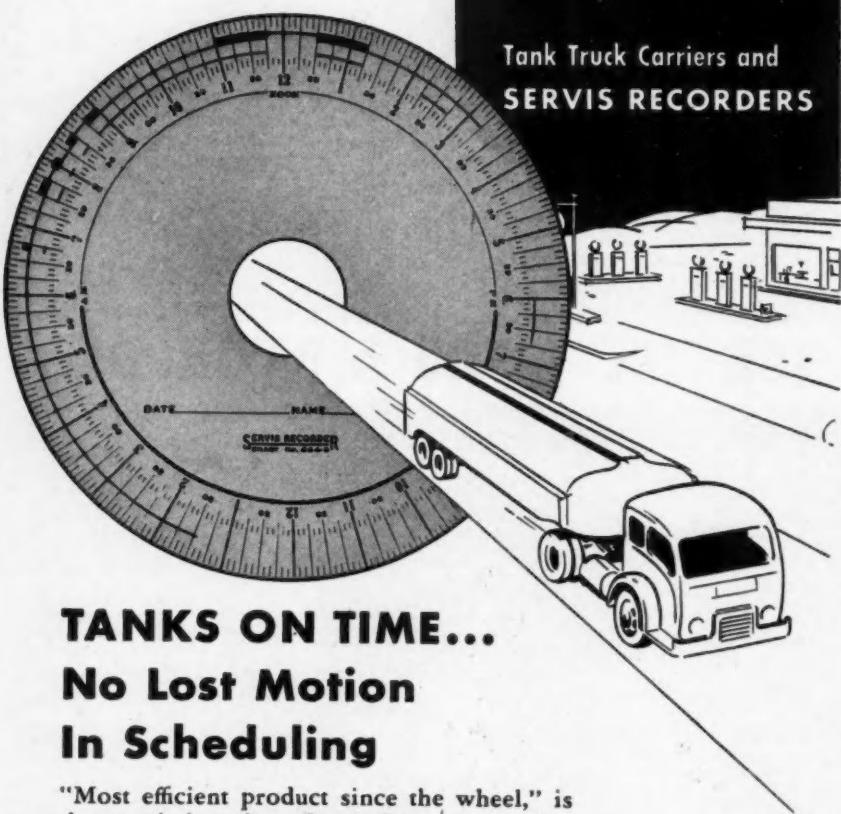
The daily safety meetings are held in the dispatcher's room and usually take only a few minutes. But this gives the safety director an opportunity to highlight any particular developments that happened the day before and also gives him an opportunity to make any particular announcements concerning changes or new aspects in the company's routine. After each such meeting, there is a question and answer period either before the group as a whole or individually. Frequently, these questions cue the safety director for appropriate remarks at the next day's meeting. Three times a week free coffee and doughnuts are served at these meetings.

Once a month there is a full safety meeting with the company supplying the breakfast. There is an attendance check and all drivers who are at the terminal on any given day are expected to be on hand.

Typical Monthly Meeting

We were fortunate to be able to attend one of the regular monthly meetings to observe the routine. Among the major subjects discussed that particular day were:

1. The low bridge problem. During the preceding month there (TURN TO PAGE 140, PLEASE)



TANKS ON TIME... No Lost Motion In Scheduling

"Most efficient product since the wheel," is the conviction about Servis Recorders as expressed by owners of fuel hauling fleets. That's because Servis Recorders help keep scheduled deliveries on schedule—with no lost motion. Servis Recorders show the pumping time, also, and record all delays and idle time.

Our Model DS provides the pumping time record if desired, or will show motor idling if this is important. This second record indicates when the motor is left running unnecessarily. But the Servis Recorder does so much more—write for the whole story. THE SERVICE RECORDER CO., 1375 Euclid Avenue, Cleveland 15, Ohio.

ASK about our TURNOVER SWITCH, to prevent fires in case of turnover.

Write today for free booklet—
"Ten Ways of Getting More Work Out of Motor Trucks."



The Servis Recorder
Tells Every Move Your Truck Makes



SO
The famous
quality thin
fit easily into
modern motor
and 1/4" Drive
openings. Tri
finish.



REVERSIBLE
RATCHETS
Sturdiest, st
made. Exclu
mechanism
strength wit
lined head
spots easily
1/4" Drives.



ENGINEER
WRENCHES
Thin, st
Wrenches,
alloy steel
Tappet and
in all sizes

THE N

The TOOLS Mechanics Choose for Today's REPAIRS and Better SERVICE



SOCKETS

The famous New Britain top quality thin wall Sockets . . . fit easily into tight spots on modern motors. $\frac{1}{4}$ ", $\frac{3}{8}$ ", $\frac{1}{2}$ " and $\frac{3}{4}$ " Drives in all needed openings. Triple plate, chrome finish.



REVERSIBLE RATCHETS

Sturdiest, smoothest Ratchets made. Exclusive double pawl mechanism gives extra strength without bulk. Streamlined head gets into confined spots easily. $\frac{1}{4}$ ", $\frac{3}{8}$ ", $\frac{1}{2}$ " and $\frac{3}{4}$ " Drives.



ENGINEERS WRENCHES

Thin, strong, balanced Wrenches, forged of finest alloy steel. Open End, Box, Tappet and Combination styles in all sizes.



The New Britain Line has set a world standard in Tool Quality for many years. Naturally, these great Tools have the precise fit, perfect balance and great turning power modern repair work demands . . . slim, trim, but powerful Socket Wrenches and streamlined Drive Parts — all of the finest alloy steel, heat treated to the peak of rugged perfection and glistening, triple plate, chrome finish. New Britain offers in this complete Line not alone the basic Tools shown, but hundreds of specialized Tools that get mechanics into and out of tight corners and difficult spots on modern engines and equipment. Ask for complete Catalog No. 58. Shown above is a magnificent New Britain Set #6151T with every basic Tool any professional mechanic will ever need. All 151 Tools contained in a sturdy steel Kit with hinged top and removable trays. Ask about it and the many other New Britain Sets that can be tailored to your particular needs.



REAMERS, PILOTS AND HONES

New Britain Tools afford a complete selection of individual Tools and Sets for reaming or honing bushing of $1\frac{5}{32}$ " diameter to cylinders 8" in diameter.



VALVE LIFTERS

Available in sizes and types to service all makes and models of passenger cars, trucks, buses and tractors.



STUD EXTRACTORS

Modern design Tools for retracting or setting studs. Slip-proof design with milled jaws. Made in $\frac{3}{8}$ " and $\frac{1}{2}$ " Square Drive — capacities $\frac{1}{4}$ " to $\frac{3}{4}$ ".

New Britain HAND TOOLS

THE NEW BRITAIN MACHINE CO.
NEW BRITAIN, CONN.



...Top Safety Honors

Continued from Page 138

had been two cases where relatively new drivers had trouble with low bridges and this was a major topic of conversation as a warning to all to be extra careful in this regard.

- Particular comments were made concerning the impend-

ing move from Buffalo to Detroit for the four winter months. The move was expected to take place about 10 days after this particular meeting. This necessitated some driving through Canada on special permits and this was discussed in some detail.
3. Mr. Louis Dornes, sales manager, whose job it is to contact dealers to whom the new cars are delivered, made a

special plea to the drivers to promote Chrysler products. It was forcefully brought home to everyone attending the meeting that their livelihood depended on their customer's success.

- President Davis wound up the meeting with a light but forceful comment on the necessity of each driver being a part of the company as he represented it in his travels far from home base.

Maintenance Vital

Maintenance, too, is not neglected in this operation. Yet its administration is relatively simple. Each time a vehicle is dispatched from the home terminal the driver must produce a signed inspection slip stating that the complete rig—tractor and trailer—has had a lubrication and complete safety inspection within the last 1000 miles.

The driver is on his own as to where he gets this check but it must be made by a company-approved station. More often than not it is the company's own well-equipped service shop at the Buffalo headquarters. Here the driver-owner usually gets the best "deal" being billed on a commercial basis for all work done. But since routes are extremely varied in length drivers may find it more convenient to have the work done at approved stops along their routes.

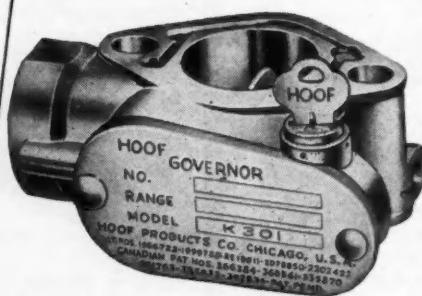
The important point is that the inspection is standardized and must include all points shown on the company's form. This is the company's assurance that all maintenance, essential to safety, is accomplished as needed. It includes brakes, tires, lights and a host of other important checks.

We probed rather carefully into whether or not the company felt that maintenance was any better or any worse now than it was before the drivers owned their own rigs. Everywhere we asked, from the president right on down to the shop, we were told that it seemed to be much better under the new plan. Because the drivers were carefully picked for their business ability as well as their driving experience, they seemed to take much greater interest in their rigs, and little if

(TURN TO PAGE 142, PLEASE)

"HOOF GOVERNORS

cut both maintenance and operating costs... with no change in running times!"



"Governed" speed doesn't necessarily mean "slow" speed. Hoof Governors simply insure that your vehicles are driven at the speed you select.

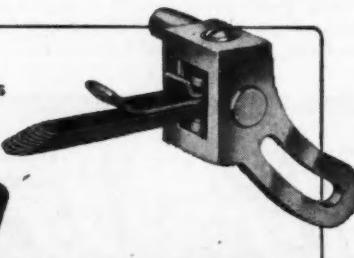
Whether this "most practical" speed is 30 mph or 60 mph, Hoof Governors provide round-the-clock protection: first, approved top speed cannot be exceeded, and second, excessive engine racing in intermediate gears is positively prevented.

Now that equipment must be conserved, Hoof protection is doubly important. Write for full facts.

A Patented, exclusive Hoof feature, this Cantilever Spring means more accurate speed control, simplified construction and longer life!

HOOF key and seal type
GOVERNORS

HOOF PRODUCTS CO.
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Truck bodies of Armorply so durable they're guaranteed for 5 years!



Use of Armorply helps Cherry & Sons, Inc., keep plant fabrication costs to a minimum and speeds up assembly time. High insulating factor, lack of body sway, and weight savings are additional reasons they prefer Armorply to other materials.

Body makers Cherry & Son, Inc., Brooklyn, N. Y., are so confident of Armorply's superior durability and strength that they offer this exceptional guarantee with every truck body.

Armorply is a unique combination of two truck body materials—metal and plywood. United States Plywood's Armorply process permanently bonds metal to one or both faces of Weldwood plywood or other core material. Any metal in any gage can be bonded to a variety of core materials.

What Armorply offers. In one material, Armorply gives you the strength, lightweight, rigidity and easy fabrication of plywood plus the toughness, long life and fireproofness of metal.

Armorply cuts fabrication time. Armorply speeds production and cuts down on re-work because it comes in large, lightweight panels that are easy to cut and fit. Now you can use cost-saving woodworking techniques in fabricating modern metal truck bodies.

Perfect for bodies, floors and doors in reefers and non-reefers, Armorply is verminproof and easy to clean. It reduces damage when used as a liner for existing bodies.

Available semi-fabricated or in sheet form, Armorply can help solve your truck problems. Send coupon now for free sample and more information.



Armorply®
METAL-CLAD WELDWOOD® PLYWOOD

A product of
UNITED STATES PLYWOOD CORPORATION
World's Largest Plywood Organization

Armorply panels are available for immediate shipment from Lewisohn Sales Co., Inc., 4001-15 Dell Ave., North Bergen, N. J.

UNITED STATES PLYWOOD CORPORATION
55 West 44th Street, New York 36, N. Y.

Please send me a free sample of Armorply metal-clad plywood and brochure.

Please have a salesman call.

CCJ-I-55

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Address.....

City..... State.....

...Top Safety Honors

Continued from Page 140

any trouble is ever experienced from maintenance deficiencies. Obviously, trailer service is paid for by the company. It includes such items as a recent changeover to fit new car models, necessitating an expenditure of close to \$60,000.

Group Incentives

Perhaps the final step in any safety program is the incentive offered to drivers. Interestingly in this case, the incentive is entirely on a group basis. Over past experience it was found that when awards were made either monetary or in merchandise to individuals, these awards went to the same group of people year after year. The men at the bottom of the list got nothing. So the company de-

cided to form a team of all its drivers and make its awards entirely on a team basis. This has proved extremely successful, as the safety record shows. If the company places in the national contest in any one of the first three spots, the drivers are given a very fine banquet in a large Buffalo hotel. This is no ordinary affair. Last year Amos Neyhardt of Penn State University was the featured speaker, and each year there is a substantial program. Wives are invited and uniformly attend. Last year at the banquet, when the company placed third place, each driver was given an engraved lighter commemorative of the event. This year, in first place, each driver was given a leather driving jacket, also bearing an emblem showing that the company was in first place.

Final Punch

As we ring down the curtain on this drama of safety achievement we should like to apologize if our story seems filled with personal tributes. It has not been intended that way. But it is a story of personalities so vitally important and so woven together that the telling of it would not be possible in any other way.

It is the story of a company that literally pulled itself up by its own boot straps. For its record has not always been as it is now. Just three years ago driver turnover ran close to 75 per cent per year. Now it is down to less than 10 per cent.

Surely the safety record speaks for itself. Yet it should be remembered that it was accomplished in spite of unusually high seasonal variations in loads, in spite of long irregular routes, in spite of long driver periods (sometimes a whole week) away from home base. And most important of all, it was accomplished in spite of a peculiar situation that necessitates moving company headquarters lock stock and barrel twice a year (to Detroit and back to Buffalo). This is during the period when the lakes are icebound and cars must be hauled from factory instead of from the docks at Buffalo.

END

Please Resume Reading Page 69

COMMERCIAL CAR JOURNAL, January, 1955

YOU NAME IT!

ALGAS LP-Gas equipment will do it!

TRANSICOLD REFRIGERATION UNIT FOR TRUCKS IS ALGAS EQUIPPED

670 Filter

1900-E Converter
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1600 Carburetor

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Write or wire today for complete information

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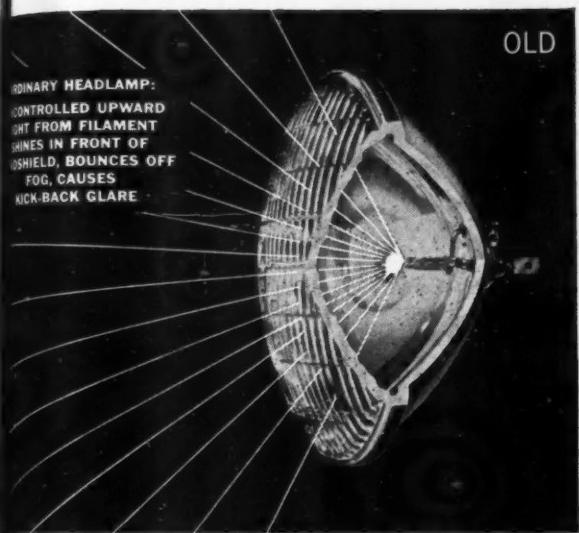
ORDINARY HEADLAMP:
CONTROLLED UPWARD
LIGHT FROM FILAMENT
SHINES IN FRONT OF
SHIELD, BOUNCES OFF
FOG, CAUSES
KICK-BACK GLARE

ABOVE: HOW REGULAR
BELOW: HOW WITH SHIELD

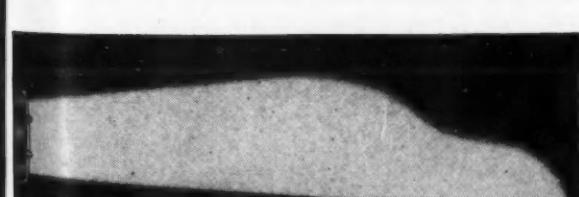
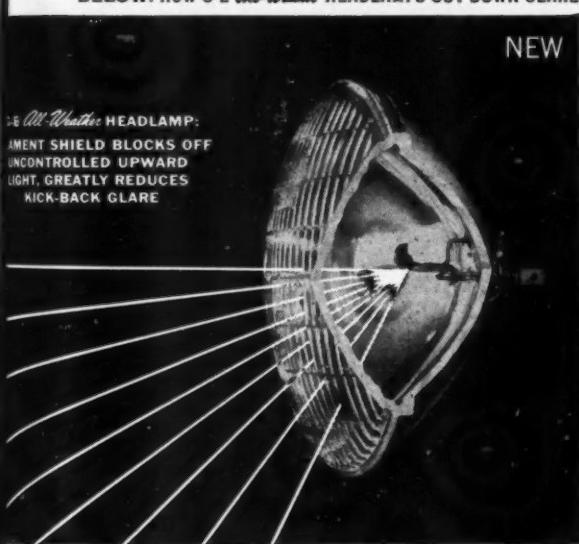
ABOVE: OLD HEADLAMP
SHIELD BLOCKS UNCONTROLLED UPWARD
LIGHT, GREATLY REDUCING
KICK-BACK GLARE

NEW GENERAL ELECTRIC
ROAD BETTER, MAINTAINS
OTHER CARS.

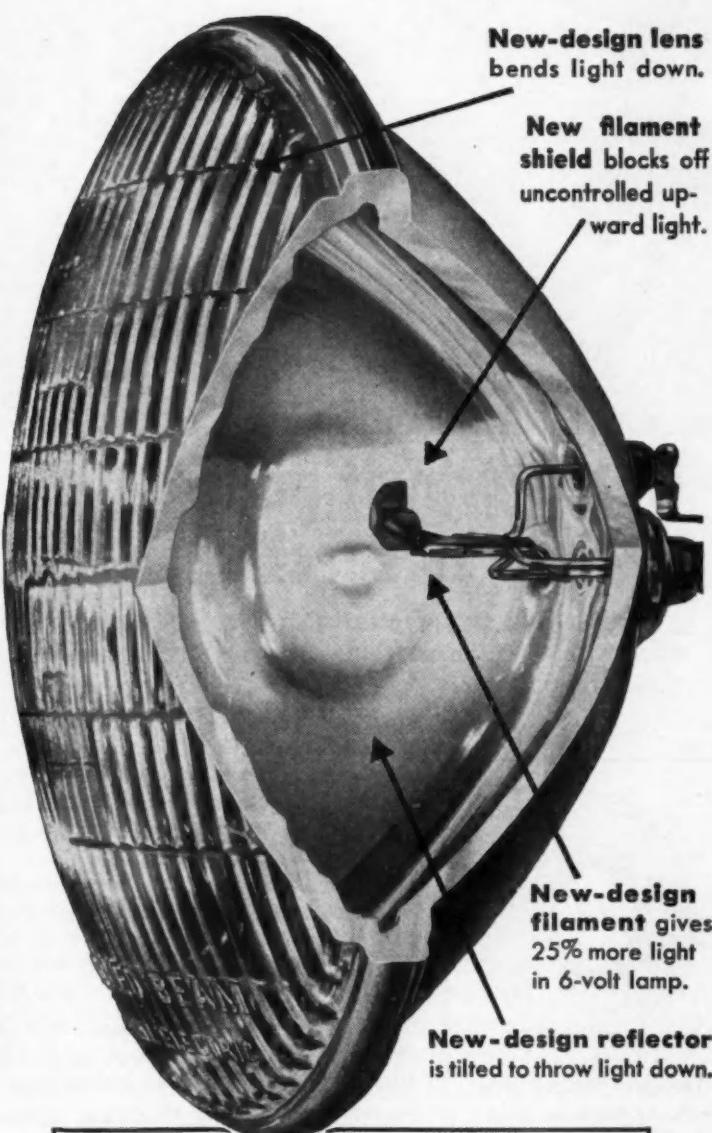
helps drivers see through fog, safer on clear nights too!



ABOVE: HOW REGULAR HEADLAMPS CAUSE FOG-GLARE
BELOW: HOW G-E All-Weather HEADLAMPS CUT DOWN GLARE



NEW GENERAL ELECTRIC All-Weather LOW BEAM LIGHTS RIGHT SIDE OF ROAD BETTER. MAKES IT EASIER TO SEE WHEN YOU'RE APPROACHING OTHER CARS.



Order your supply NOW!

Lamp No.	Voltage	List Price	Case Quantity
5040	6	\$1.80	8
5400	12	\$1.90	8

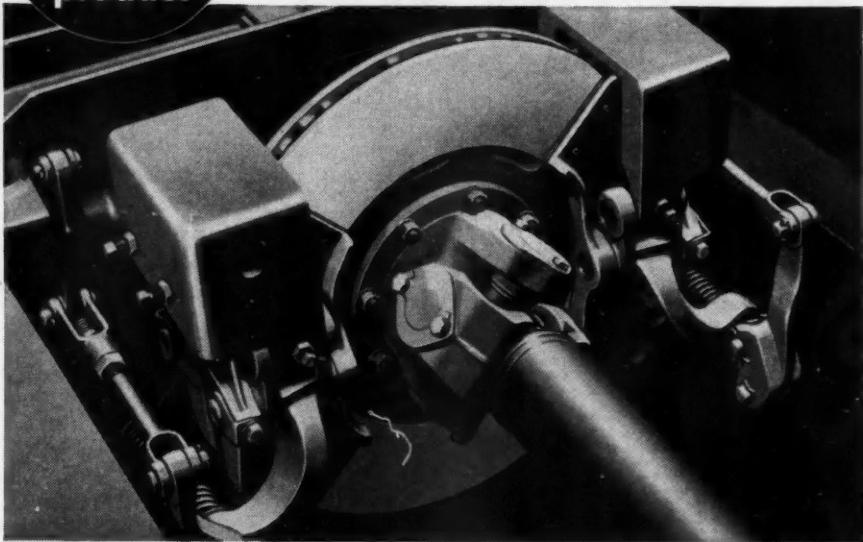
A combination pack of six 6-volt and two 12-volt lamps is also available.

Progress Is Our Most Important Product

GENERAL  **ELECTRIC**

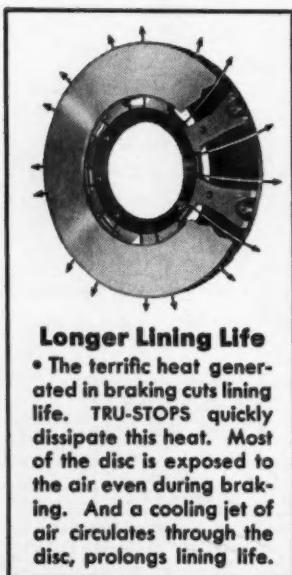


Tru-Stop Emergency Brakes



Here's why it pays to specify TRU-STOPS

• Leading manufacturers of Trucks, Buses and Tractors offer TRU-STOPS Emergency Brakes, either as standard or optional equipment, to secure for their customers:



Longer Lining Life

The terrific heat generated in braking cuts lining life. TRU-STOPS quickly dissipate this heat. Most of the disc is exposed to the air even during braking. And a cooling jet of air circulates through the disc, prolongs lining life.

For full details on
TRU-STOP
write for booklet

Real Emergency Braking. TRU-STOPS are real emergency brakes—not just "parking brakes." They serve as auxiliary brakes on long down-grades and can bring the vehicle to a smooth, quick stop if service brakes suddenly fail.

Good safety practice demands immediate deadlining of a vehicle after service brake failure. TRU-STOPS can do this and more. They can handle the vehicle with safety so it can be removed from the road.

Smooth, Positive Stops. TRU-STOPS prevent accidents by insuring quick, positive stops in emergency situations.

Positive Parking Brakes. TRU-STOPS hold safely on steep grades—prevent "parking brake" accidents.

Lower Service Requirements. TRU-STOPS are mounted directly on the drive shaft. Their simplicity of design and accessibility reduce maintenance requirements. Relining or adjustment is a simple job for any mechanic with ordinary tools. It is not necessary to drop drive shaft.

Specify TRU-STOPS for factory installation on your next vehicle.



Automotive and Aircraft Division
AMERICAN CHAIN & CABLE

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TRADE
MARK
TRU-STOP
Emergency
Brakes

Parts Salvage Saves

Continued from Page 75

Chrome Plating Benefits

Chrome plating has enabled us to enjoy substantial benefits not only from the standpoint of restoring original dimensions but also from the fact that plated surfaces last approximately 50 to 100 per cent longer in our operation. For example, where the original king pins wear out at about 75,000 miles, we are getting 150,000 miles on rebuilt ones. Engine camshafts, originally giving 75,000 miles of service, now last 180,000 miles after chrome plating.

In the last twelve months we have had 35 brake camshafts re-plated at a cost per unit of approximately \$6.50. New brake cams would cost around \$15.70 apiece. So you can see that the savings are worth looking into. Now to further show the advantage of chrome plating, original cams last 100,000 miles. Rebuilt cams will go 150,000 miles. Add this to the original savings, and you just can't afford not to salvage.

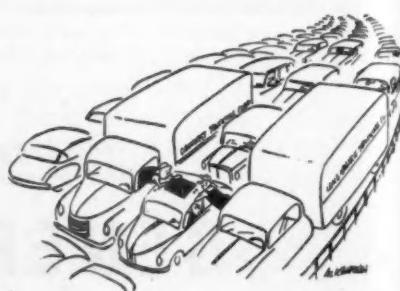
Use Outside Specialists

A list of salvaged parts appears above. Note that there are 26 different parts and assemblies that lend themselves to this type restoration. We use outside specialists for this work, primarily because our volume does not justify the huge investment in chrome plating equipment.

We do have metallizing equipment, but due to the better job possible with chrome plating, we use sprayed metal only for restoring press fits and in other places not subject to peening or impact.

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ONE OF A SERIES

You Get Many Benefits by Specifying **VICKERS®** Hydraulics



All machinery made by man requires servicing at times. Every manufacturer has two responsibilities: First, to build his equipment in a way that will require the least amount of servicing. Second, to see to it that servicing, when needed, is handled with speed, efficiency and low cost.

Vickers hydraulic equipment is built to keep service requirements to an irreducible minimum. But when service is required, it is handled by Field Service Specialists working out of Vickers offices from coast to coast. These men have been carefully trained in Vickers plants and are thoroughly competent. They know how to adjust and maintain any piece of Vickers equipment . . . any combination of components. They are also qualified to instruct customers' service organizations in improving their hy-

draulic maintenance practices. These men devote their full time to servicing Vickers products in customers' plants. They do their job well and at minimum expense.

This is only one of many benefits you receive when you specify Vickers Hydraulics.

VICKERS Incorporated

DIVISION OF THE SPERRY CORPORATION

1418 OAKMAN BLVD. • DETROIT 32, MICH.

Application Engineering Offices: • ATLANTA • CHICAGO AREA (Brookfield) • CINCINNATI • CLEVELAND • DETROIT • HOUSTON • LOS ANGELES AREA (El Segundo) • MINNEAPOLIS • NEW YORK AREA (Summit, N. J.) • PHILADELPHIA AREA (Media) • PITTSBURGH AREA (Mt. Lebanon) • ROCHESTER • ROCKFORD • SAN FRANCISCO AREA (Berkeley) • SEATTLE • ST. LOUIS • TULSA • WASHINGTON • WORCESTER

6395

ENGINEERS AND BUILDERS OF OIL HYDRAULIC EQUIPMENT SINCE 1921



INTRODUCING . . .

... A. M. Price, promoted to general manager of terminals, Overnite Transportation Co., Richmond, Va.

... Thomas D. Nicholas, promoted to director of operations, Pilot Freight Carriers, Inc., Winston-Salem, N. C.

COLD-WEATHER Tune-Ups Save Money!

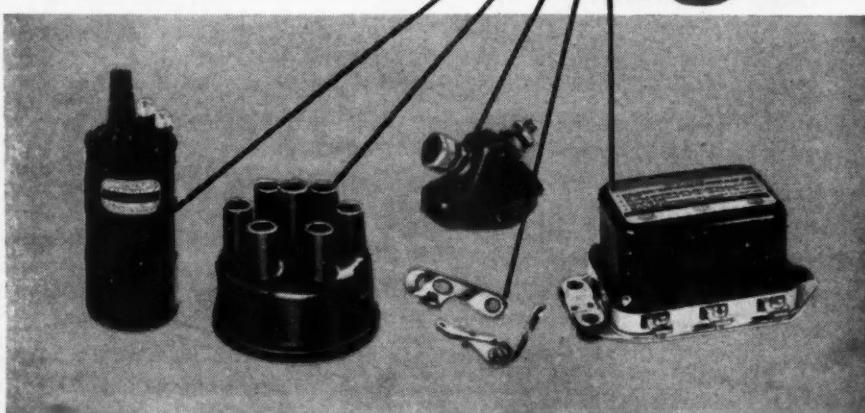
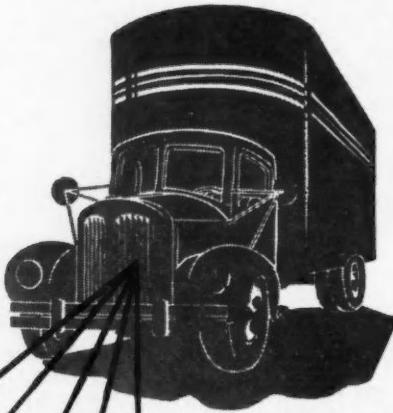
Start Now—with NIEHOFF

Warranted Ignition Parts

Save money by guarding now against roadside repairs, towing charges, and vehicles out of service this winter. Niehoff Warranted Ignition Parts provide one of the surest ways of keeping your fleet operating efficiently, economically—and profitably!

Quick, easy installation saves time costs, speeds job completions. Niehoff Warranted Ignition Parts are precision-made to fit all popular makes and models of cars and trucks. What's more, each part is warranted for 90 days or 4,000 miles of use as a pledge of Niehoff dependability.

So order Niehoff Warranted Ignition Parts now...keep your fleet going this winter!



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4925 LAWRENCE AVENUE, CHICAGO 30, ILLINOIS
WAREHOUSES: NEW YORK 19, N. Y., 250 W. 54th Street
PHILADELPHIA, PA., 1631 Fairmont Ave. • BOSTON 34, MASS., 254 Brighton Avenue
BRANCHES: LOS ANGELES 15, CALIF., 1330 W. Olympic Blvd.

... W. A. Robertson, promoted to transportation superintendent, London, Ont., plant, John Labatt, Ltd., London, Ont., Canada.

... Neil Williams, Howard Price, Clyde Schulte, Howard Cooper and Jerry Mitchener, promoted to territory managers in the southeastern region, The AP Parts Corp., Toledo, Ohio.

... W. M. LeMayeau, promoted to manager, Western Division, National Accounts Sales, Gould - National Batteries, Inc.



... A. S. McEvoy, manager, newly established truck fleet sales division, GMC Truck & Coach Division, General Motors Corp.



... J. W. Kern, replacement sales manager, Perfect Circle Corp., Haerstown, Ind.



... Ross Miller, named sales manager, St. Paul Hydraulic Hoist, Mattoon, Ill.



... Joseph M. Fitzgerald, sales supervisor, Kold-Hold Division, Tranter Mfg., Inc., Lansing, Mich.



... Henry J. Nave, left, promoted to president, The White Motor Co. of Canada, Ltd., and Karl A. Roesch, right, promoted to director of service, The White Motor Co., Cleveland, Ohio.



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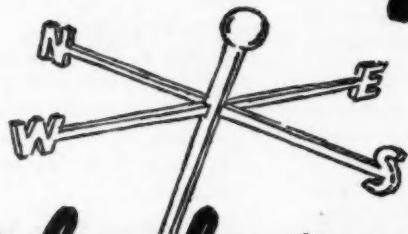
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everywhere—
THEY GO!



turbocharged
WAUKESHA
Diesels

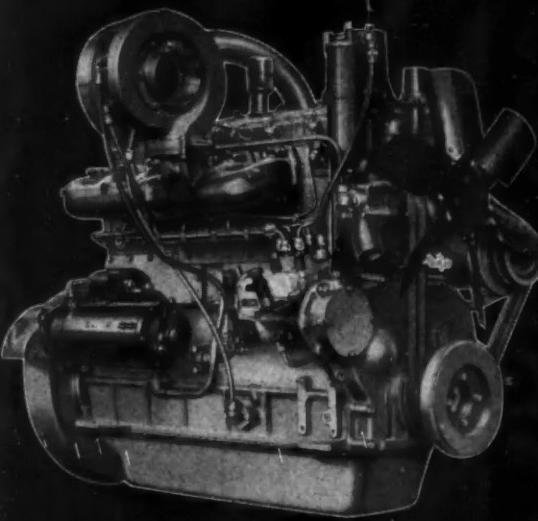
For greater power at lowest fuel cost—the Waukesha Turbo-supercharged 135-DKBS! It is a compact, powerful, heavy-duty, six-cylinder, four-cycle, full Diesel. The patented combustion chambers burn all standard "high-speed Diesel fuels" having cetane values of 45 or above. This powerful supercharged Diesel offers lively acceleration, clean burning, prompt starting, a tremendous reserve of power, and great overall economy.

The exhaust turbocharger system of supercharging affords a great increase in horsepower with a minimum of parasite load. Even without an intercooler the maximum power available from the Model 135-DKB Diesel Engine is increased from 147 hp. to 185 hp. at 2800 rpm. Without positive drive from the engine, the parasitic load decreases at part engine load, which improves overall fuel economy throughout the speed range.

Other advantages of the exhaust turbocharger are a relatively light and compact installation, flexibility in mounting, and the smoothing out of the exhaust impulses by the turbocharger turbine. Contributing to the Waukesha turbocharged Diesel's complete reliability and long-lived, trouble-free operation are time-tested and war-proved features developed in over 45 years of study and experience in building heavy-duty industrial-type internal combustion engines.

WAUKESHA MOTOR COMPANY, WAUKESHA, WIS.
NEW YORK • TULSA • LOS ANGELES

with the
**PAYLOAD
POWER PLANT**



135-DKBS TURBOCHARGED DIESEL—six cylinder, 4½-in. x 5-in., 426 cu. in. displacement, maximum hp. 185 at 2800 rpm. Get Bulletin 1617.



THIS WAUKESHA 135-DKBS powered high-speed over-the-highway rig operates in the Northern California-Oregon region.

Fleetman's Library

Continued from Page 88

and (3) a table of tap drill sizes. It is offered by U. S. Axle Co., Inc. For a free copy of the chart, circle L 5 on the postcard on page 84.

"The Perfect Crime" is the title of a highway film that civic-minded fleetmen interested in selling the public on the need for adequate highways will be showing soon. In full color

with sound, it runs 21 minutes. The story it tells is a safety one. It explains how more adequate roads can help reduce traffic accidents. You can make arrangements for local showing to service clubs and other groups or over your town's TV station by writing the Sales Promotion Dept., Caterpillar Tractor Co., Peoria 8, Ill.

Wood truck body performance is reported on in this booklet published by Timber Engineering Co., research affiliate of the National Lumber Manufacturers Assn. It describes 14 months

of road testing three different test models of wood bodies by the company. Circle L 6 on the postcard on page 84 for your free copy.

Motor Carrier Act of 1935, as amended to Nov. 1, 1954, has been put into book form by American Trucking Assns. It includes other acts affecting motor carriage and has an index by paragraph numbers. It costs \$2.50, can be had by writing the association at 1424 Sixteenth St., N.W., Washington 6, D.C.

The history of a motor common carrier, Norwalk Truck Line, is covered in this interesting, 226-page book. It is a fine example of a story that could be written about many of the nation's truck lines. A copy costs \$5.50, can be had from Prentice-Hall, Inc., 70 Fifth Ave., New York 11, N.Y.

Tandem suspension designed for automatic tracking, automatic load distribution, axle compensation, easy installation, light weight, no lubrication is described in this four page folder from Truck Equipment Co. Circle L 7 on the postcard on page 84 for your copy.

Cap and rod grinder and rod reconditioning mandrels made by Sunnen Products Co. are covered in this supplement to the company's catalog. It is claimed the grinder will recondition a set of six con rods in less than 30 min. Circle L 8 on the postcard on page 84 for a copy.

Muffler catalog just published by Pratt Industries, Inc., shows the company's complete line of truck mufflers and accessories, including its line of TD (Tough Duty) units for heavy gasoline and diesel trucks. Circle L 9 on the postcard on page 84 for a copy of this new catalog.

Heater and defroster switches made by Cole-Hersee Co. are covered in this new comprehensive catalog. Circle L 10 on the postcard on page 84 for a copy.

Jacks and other shop lifting equipment are reviewed in this catalog from Walker Mfg. Co. You can get a copy by circling L 11 on the postcard.

Refuse collecting body is the subject of this folder from the Heil Co. For a free copy of the details on this automatic compacting body, circle L 12.

Mufflers, stacks and complete exhaust systems as made by Alexander-Tagg Industries, Inc., are described in this catalog you can get by circling L 13 on the postcard on page 84.

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NOW! Win Big CASH Prizes

Just For Answering This Question—

"How do YOU use
MARVEL
MYSTERY OIL?"

A 3¢ STAMP

IS ALL YOU NEED TO WIN THE
EASIEST MONEY OF YOUR LIFE!

SIMPLY WRITE A LETTER, TELLING US ABOUT
ANY DIFFERENT, INTERESTING WAYS YOU'VE
FOUND TO USE MARVEL MYSTERY OIL AT
YOUR SERVICE STATION OR SHOP, THAT'S ALL
THERE IS TO IT! AND YOU CAN SEND IN
AS MANY TIPS AS YOU LIKE —
THE MORE THE MERRIER!

YOU CAN WIN...
FIRST PRIZE \$100.
SECOND PRIZE \$50.

AND 40 ADDITIONAL
CASH AWARDS AT
FIVE DOLLARS EACH!

PICK UP YOUR PENCIL
AND WRITE TO:

EMEROL
MANUFACTURING CO., INC.

Dept. D, 242 West 69th Street
New York 23, N.Y.

Entries become the property of the Emerol Mfg. Co.
The decisions of the judges are final.
Contest ends March 30, 1955.



Marvel Mystery Oil is a lightweight, high-film strength oil specially developed for use in modern high compression engines. Install the Inverse Oiler in engines for Marvel Mystery Oil. Automatic... fully adjustable... easy to install... fully guaranteed.



rebuild Cummins PT fuel system



When Transport Lease Co. of Denver, Colorado, overhauled their 300 h.p. Cummins Diesel after 260,000 miles, they also "renewed" their PT fuel system. Here is the record:

	Total Cost	Cost per 1,000 Miles
Rebuild PT Fuel Pump— Parts	\$14.34	\$0.055
Check and rebuild PT Pump Labor—4 hours	\$16.00	\$0.061
Clean, inspect, and re-install injectors Labor—3 hours	\$12.00	\$0.046
Normal Maintenance— Setting injectors at 12,000 mile intervals Labor— $\frac{1}{2}$ hr. x 21 settings	\$42.00	\$0.161
Total fuel system maintenance cost	<u>\$84.34</u>	<u>\$0.323</u>

A record like this is possible with any Cummins automotive diesel, from the 150 h.p. JBS to the 300 h.p. NHRS. The reason is the extreme simplicity of the PT system . . . no timing adjustments, no fuel rack or plunger pump adjustments, no check or injector valve troubles. *And no spark plug, points, condenser, or wiring problems as with gasoline engines.*

In addition, with Cummins you get more miles per gallon of fuel, faster speeds on grades, and greater equipment availability. These factors also save you time and money.

Before you make your 1955 plans for purchases of new equipment, learn more about the new PT fuel system . . . from your local Cummins distributor or truck representatives or by mailing us this coupon.

CUMMINS

Cummins Engine Company, Inc.
Columbus, Indiana

Leader in rugged, lightweight,
high-speed diesels (60-600 h.p.).

Cummins Engine Company, Inc.
Columbus, Indiana

Please send me free illustrated folder, "Cummins
PT Fuel System."

Name _____

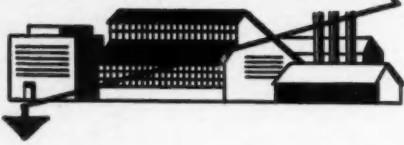
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FACTORY FLASHES



The Galion Allsteel Body Co., Galion, Ohio, has named Truck Hoist

& Equipment Co., Minneapolis, Minn., as distributor in that state for Galion Allsteel dump bodies.

Trailmobile, Inc., Cincinnati, Ohio, has opened its new factory branch building in Omaha, Nebr.

The Gear Grinding Machine Co., Detroit, has acquired all assets of Republic Gear Co., Detroit, and its wholly owned subsidiaries, Detroit Bevel Gear Co., Detroit, and Almetal Universal Joint Co., Cleveland, Ohio.

Oakite Products, Inc., New York

City, has opened its new laboratory facilities at 350 Hudson St. The new units cover 30,000 sq ft on a single floor.

Gar Wood Industries, Inc., Wayne, Mich., has opened two new direct factory truck equipment sales branches, one in Tulsa, Okla., and one in Springfield, Ill.

The AP Parts Corp., Toledo, Ohio, has purchased Belond Mfg. Co. and Southern California Muffler Corp., both of Culver City, Cal. They will operate as subsidiaries of AP Parts.

A REVOLUTIONARY APPROACH

Solves Old Problems of

WEIGHT REDUCTION WITHOUT SACRIFICE OF STRENGTH



Body by National Light Metals & Plastics Co., Cato, Mich.

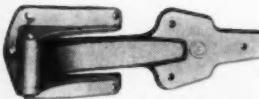


No. 5624
Rugged,
3-Point
Universal
Door Lock.

One of several models available, this unusual cargo body, 12 ft. long x 92 in. wide x 6 1/2 ft. high (inside), weighs only 1200 lbs., thanks to the ingenuity and progressiveness of The Dow Chemical Co. of Midland, Michigan.

Built of magnesium extrusions and sheet, rigidity with strength is prevalent throughout.

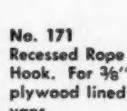
The wise selection of Eberhard Aluminum Hinges, Eberhard Universal Door Lock, Door Holder and Recessed Rope Hook completes the job and affords greater utility and serviceability.



No. AL 375
Aluminum Hinge Heat treated, rust resistant. Saves weight without sacrificing strength.



No. 5601
Positive Door Holder.



No. 171
Recessed Rope Hook. For 3/8" plywood lined vans.



EBERHARD MANUFACTURING COMPANY
EVARTS AVE. • CLEVELAND 4, OHIO
Division of the Eastern Malleable Iron Company



LONG
RUN

TRUCK BODY
HARDWARE BY

EBERHARD

THE MOST COMPLETE LINE AVAILABLE



Southern Plaza, Chicago, is now operating 15 tractors equipped with Fabco Texas Special Single-Type Pusher axles purchased from Hobbs Trailer Equipment Co., Dallas, Texas.

The Hertz Corp., Chicago, is negotiating to acquire the truck rental business of Metropolitan Distributors, Inc., New York City.

Associated Transport, Inc., New York City, has appointed John Canfield as claims prevention coordinator in charge of a staff of claims prevention supervisors to integrate and intensify the claims prevention activities of the operations personnel and other departments of the fleet.

Cooper-Jarrett, Inc., Chicago, Ill., opened its new Philadelphia terminal with an open-house celebration. The city's Mayor Clark presided over the official opening.

Smith Transportation Lines, Inc., Watertown, N. Y., has changed its name to Seaway Motor Express, Inc.

New Orleans Public Service, Inc., New Orleans, La., has put a fleet of 60 new, 51-passenger buses in operation. They are equipped with air suspension, power steering, six-cyl diesel engines, hydraulic drive.

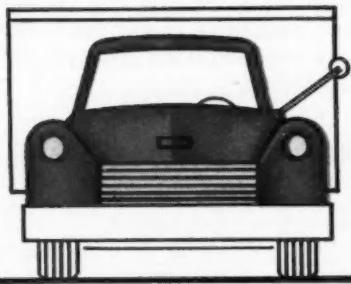
Asbury Contractors, Inc., a part of the Asbury System, Los Angeles, Cal., has been formed to operate a fleet of 83 dump trucks and other construction vehicles. The new company combines the activities of Asbury Transportation Co. and Hess-Mace Trucking Co.

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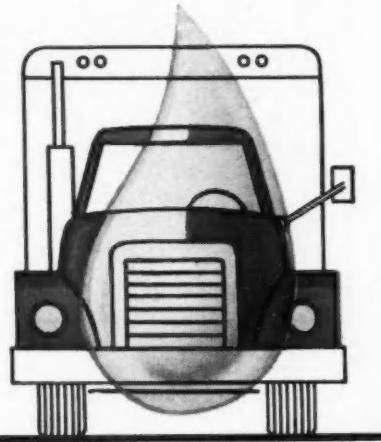
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Better



Brake Fluid



Conditions



MASTER CYLINDER REPAIR KIT
Contains every part necessary to put a master cylinder back in normal operating condition.

Cars, trucks and buses stop better—stop faster—in heavy traffic or light, with Delco Super 11 heavy-duty brake fluid in the brake systems. Delco Super 11 exceeds U. S. Government specification VV-F-451a. It also exceeds SAE specification 70R1, which establishes performance standards for heavy-duty brake fluid, including operating temperature ranges, lubrication, stability, corrosive effect on metals and rubber. There's a big pre-sold market for Delco Super 11, too—it's factory-installed in many vehicles, including all General Motors cars and trucks.

You can order Delco Super 11 and Delco Super 9—the moderate-duty brake fluid that exceeds SAE specification 70R2—from your United Motors distributor. Both are available in any convenient quantity, from 8-ounce cans to 54-gallon drums.



**moraine
products**

DIVISION OF GENERAL MOTORS, DAYTON, OHIO

New Product Descriptions

Continued from Page 86

P23. Rescue Kit

Industrial Safety Specialties Co., Perkasie, Pa., is producing a fire rescue kit including fire blanket, hood and gloves of aluminized asbestos packed in a handy carrying case. Fleet safety patrol cars should find it handy for driver rescue when the

accident results in a vehicle fire. The asbestos blanket is of the same type as that used in recent tire fire tests.

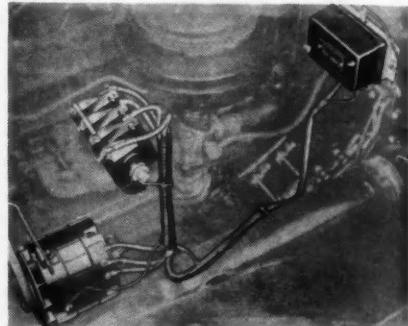
P24. Snatch Blocks

LeBus Rotary Tool Works, Longview, Texas, is now producing a new "Trucker's" snatch block. It features

a new type of threaded bolt pin or yoke pin which offers positive and safe locking facilities. A triple locking feature is incorporated in its operation to prevent any possible loss through truck vibration. After the pin has bypassed these locking points it recesses into a permanent locking position for assurance against any loss of pin. They are available in five sizes; light duty 6 in. and heavy duty 6½, 8, 8½ and 10½ in. Working load capacities range from 25 to 45 tons with ultimate hook capacity of 120,000 lb.

P25. Alternator System

Leece-Neville Co., Cleveland, Ohio, has announced a newly designed alternator charging system, engineered to provide quick, safe, on-the-spot battery charging. It is installed in a conventional service vehicle replacing a standard generator. The com-



plete rig consists of the alternator, a rectifier to change the alternating current to direct current, and a special regulator. Two cables, about "0" in size, are permanently attached to the service vehicle's rectifier; clips with shields are on the other ends of the cables which are coiled and hung on the fire wall of the truck.

P26. Tailgate Loader

Converto Mfg. Co., Cambridge City, Ind., is producing a "Converto-Wood" tailgate loader. Two capacities are available, 2000 and 4000 lb. The assembly is mounted under the rear of a truck and operates hydraulically. It fits all 1½ ton and larger trucks, requiring no cutting or altering of cross members and undercarriage for mounting. Flooring on the gate is of non-skid steel construction, and the gate edge is beveled for easier loading.

P27. Retrieving Tool

Superior Screw & Mfg. Co., Chicago, is marketing a new "Magic Hand" retrieving tool. It features a push-

(TURN TO PAGE 162, PLEASE)

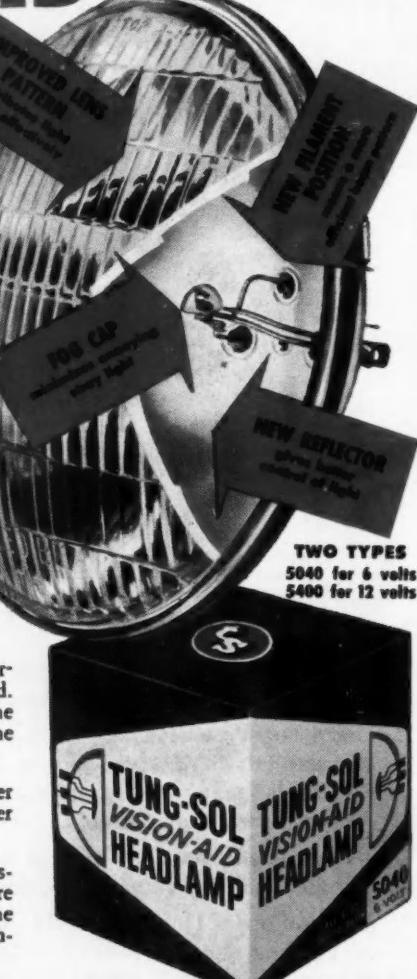
New TUNG-SOL All-Glass Sealed Beam VISION-AID HEADLAMP

IMPROVED BEAM PROVIDES BETTER VISIBILITY



Conventional sealed beam headlamp radiates an arc of stray light. This uncontrolled light causes back-reflection from fog, rain, snow or dust in the air, thus blocking visibility in bad weather.

Vision-Aid Headlamp emits little stray light—almost none above the usual beam level. Drivers can see better in bad weather—see further in good weather. The light also is less annoying to approaching drivers.



Be the first in your community to offer this new and safer headlamp to your customers. Order Tung-Sol VISION-AID HEADLAMPS from your jobber today.

TUNG-SOL ELECTRIC INC., Newark 4, N. J.

Sales Offices: Atlanta, Chicago, Columbus, Culver City (Los Angeles), Dallas, Denver, Detroit, Newark, Philadelphia, Seattle.
Tung-Sol makes All-Glass Sealed Beam Lamps, Signal Flashers, Picture Tubes, Radio, TV and Special-Purpose Electron Tubes, and Semiconductor Products.

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loads—their hardest routes*

Repowered by
GMC

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REPLACEMENT
ENGINES
superpower any truck!

SALES & SERVICE
GMC
TRUCKS

You'll find them in big oil tankers traveling mountain highways. In hustling freighters working tight schedules. And in huge rigs like this one that hauls gigantic metal assemblies used in industrial construction.

GMC Replacement Engines have proved their mettle in such truck-killing operations—time and time again.

The truck in the picture offers a good example. It spends about two-thirds of its time in rugged off-highway work. And its engine does an extra job—powering a winch used to hoist as much as 30,000 pounds at a clip.

To date the engine has run 35,000 miles. And the hidden mileage of the winch operation is even more than that. "But there have been no repairs and hardly any maintenance," the shop "super" reports. "Those GMC's are great engines!"

There's nothing unusual about this experience. In every kind of hauling, GMC Replacement Engines are cutting maintenance costs. Users claim important fuel savings. And trucks are serving years longer.

What's more, there's one to fit almost any make or model truck on the road today. They blanket the 125- to 225-horsepower range—gasoline and Diesel. And you can get one engineered for *your* truck—quickly and easily—through your nearest GMC dealer.

GMC Truck & Coach
A General Motors Division

New Products

Continued from Page 158

button handle that opens and closes a strong steel "claw" at the end of a 24-in. flexible steel cable.

P28. Tune-Up Tester

Sun Electric Corp., Chicago, has released details of its Model No. TUT-3 tune-up tester. Cranking voltage,

distributor point dwell, dwell variation, operating voltage, secondary resistance, ignition output and leakage, ignition advance, both mechanical and vacuum, as well as engine vacuum and rpm, are tested with this small unit. One of the features of this tester is the battery powered electronic distributor tester unit which tests both the mechanical and vacuum advance of the distributor without removing the distributor from the vehicle. In addition, it is possible to set distributors to the proper number

of degrees of advance even on engines without suitable markings on fly wheel or balancer.

P29. Generator Regulators

American Bosch Division, American Bosch Arma Corp., Springfield, Mass., has added a 12-volt model to its series of generator regulators to provide coverage for vehicles which now have 12-volt electrical systems. It is designated as Model No. RGS 12-104.

P30. Bead Loosener

Bishman Mfg. Co., Osseo, Minn., has just announced a giant-sized bead loosener for the giant tires used on off-highway equipment. It exerts up to 10,000 lb pressure on the bead to break it away from the tapered bead

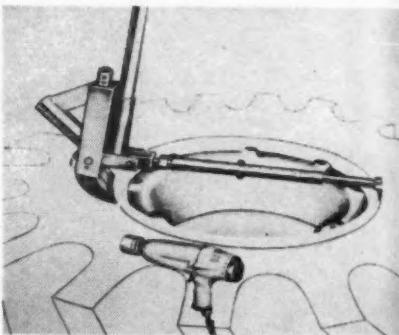
Since 1954, all cars have been factory-filled with SAE Heavy Duty Brake Fluid! With the new method of mounting master cylinders on the fire wall, it becomes imperative that you refill with SAE Heavy Duty!

For best results, use EIS SAE SUPER "50"! It meets and exceeds specification 70R1 and is formulated to withstand extreme heat in all conditions of operation. Costs but a few pennies more but it brings customers back—alive!

Write for NEW catalog!
EIS AUTOMOTIVE CORP.
Middletown, Conn.

REPLACE... REPAIR... REFILL WITH EIS
THE COMPLETE BRAKE PARTS LINE

GET IT FROM YOUR AUTOMOTIVE PARTS DEALER



seat rims now being used on these wheels. Simple to operate, it loosens both beads with wheel off or outside bead with wheel on machine. The bead loosener can also be used for truck and bus tires. A hub adapter for wheels having extended hubs is also available.

P31. Alternator Systems

Leece-Neville Co. is producing a new line of 6 and 12-volt alternator electrical systems said to be competitively priced with a standard DC system. New models include a light-duty unit and a heavy-duty unit, both with capacities of 12 volts, 50 amp; also available are a light-duty model and a heavy-duty model with capacities of six volts, 60 amp. The new alternators are expressly designed for fleets of small trucks used for delivery purposes by dairies, bakeries, laundries, dry cleaners, and other such firms. The numerous starts and stops required of these vehicles have no effect on the ability of the new alternators to keep their batteries charged.

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COMMERCIAL CAR JOURNAL, January, 1955

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Says Mario De Martino
Serviceman at
Hagin & Koplin, Inc.
Newark, New Jersey

"I've more than doubled
my pay since I bought a
CP Air Impact Wrench"

As Mr. De Martino puts it, "A man with a hand wrench spends up to 2 hours removing and replacing the two cylinder heads on a Ford V-8 engine. I can do the whole job in 20 minutes with my CP Air Impact Wrench." Mr. De Martino attributes his increased earnings to his CP wrench which he uses on radiators, clutches, mufflers, cylinder heads, U-bolts and everywhere else.



Chicago Pneumatic

AIR AND ELECTRIC IMPACT WRENCHES • PNEU-DRAULIC TRUCK JACKS AND PUMPS • ZIP-GUNS, FENDER IRONS AND BEAD BREAKERS

COMMERCIAL CAR JOURNAL, January, 1955

JANUARY NEWS ROUNDUP

SAE's 50th Anniversary

Society of Automotive Engineers opens its 50th anniversary year with its annual meeting in Detroit this month, Jan. 10-14. Highlight of the meeting will be reports on the "world's automotive future." Of interest to fleetmen will be talks by T. A. Boyd, General Motors Corp., considering the future of fuels and lubricants; O. A. Brouer, Swift & Co., future trends in automotive transportation and maintenance; C. A. Lindblom, International Harvester Co., on the future of motor trucks and buses. There will be also a round table on turbine power plants.

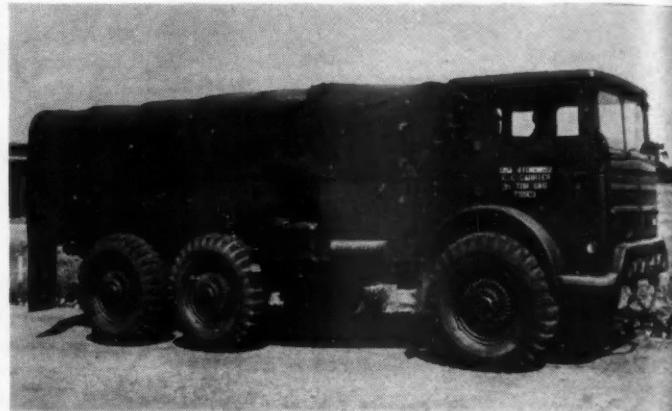
Private Truck Council

Private Truck Council of America, meeting in New York City, Jan. 20-21, will discuss highway building, third structure taxes, and "unwarranted attacks on private truck operators." On Thursday afternoon, Jan. 20, W. H. Paxton, Sutherland Paper Co., will be principal speaker in a workshop forum on public relations. The Council will make its Safe Driving Awards for 1954 on Friday afternoon.

Curry Speaks at TTMA

Interesting feature of Truck-Trailer Manufacturers Assn. meeting in Boca Raton, Fla., Jan. 27-29, will

An experimental, all-aluminum Army truck weighing 6000 lb less than the conventional model is being tested by Chrysler Corp., Detroit. A cab-ahead-of-engine, 2½-ton truck with six-wheel drive, it weighs 9000 lb compared with the 14,000-15,000 lb weight of the conventional 2½-ton Army truck. Body of the truck is made of aluminum as well as the wheels and axles. Front and rear axles are identical and interchangeable. Each wheel is individually suspended with torsion bar springing and has hydraulic disc brakes operated by an air-assisted hydraulic system. Automatic gear shift is included and also ball joint suspension makes the truck virtually impossible to stall. Driving and braking forces are transmitted to the steel frame by upper



and lower arms, each wheel having its ends supported in bearings. Aluminum cab has an open top that can be covered with a special plastic cover. Windshield of the truck slides up and down instead of folding flat on the hood. The truck has a 6 cyl, 200 hp, air-cooled engine, and is capable of speeds over 60 mph. Instead of a carburetor, a fuel injection system is used, resulting in no loss of engine speed in going up steep hills. The T55 can climb a 60 per cent grade.

be a speech by Neil J. Curry, American Trucking Assns. president. Billed as a "fighting speech, designed to answer critics of highway transport . . ." it will be tape recorded and made available to TTMA members for sponsorship over local radio stations.

Pacific Automotive Show

West coast operators are reminded that the 7th annual Pacific Automotive Show will be held late next month, Feb. 24-27, in the Pan Pacific Auditorium, Los Angeles, Cal. Plans have been made for a record number of exhibitors.

Among the States

Colorado: The state's legislative council is expected to recommend setting up 20 permanent and 20 mobile ports of entry for trucks designed to bring in at least \$1 million more in truck taxes.

New York: Commercial vehicle registrations expire on midnight, Jan. 17. Although the law says Jan. 15 is the date, two extra days are allowed since Jan. 15 falls on Saturday. Application forms to be certified as an official inspection station under the state's new semi-annual inspection law are now available. They are being mailed to gasoline stations, automobile dealers and garages. They can be had by writing the state's Bureau of Motor Vehicles. Up to the present no deadline has

(TURN TO PAGE 170, PLEASE)

The above truck stop was designed for Cities Service by the noted industrial designer Henry Dreyfus. It is located on Route 50 in Cicero, Ill., just outside of Chicago. In addition to the usual maintenance and refueling facilities, it has a full-sized restaurant downstairs and drivers' dormitory upstairs. The air-conditioned lounge on the second floor has a television set, radio-phonograph, desks, card tables, phones and comfortable chairs. An overnight stay with facilities for a morning shave and shower costs \$1.50. Sleeping quarters include individual lockers, double-deck bunks.



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CEN



THE END
RESULT:

HERE'S HOW IT WORKS:

FIRST . . .

Back your Cemco equipped tractor under the trailer. Hydraulic power with 37,500 pounds capacity raises front end of trailer from ground.

THEN . . .

by means of a gauge connected with the high pressure line, the driver reads the pounds pressure translated accurately into pounds lifted.

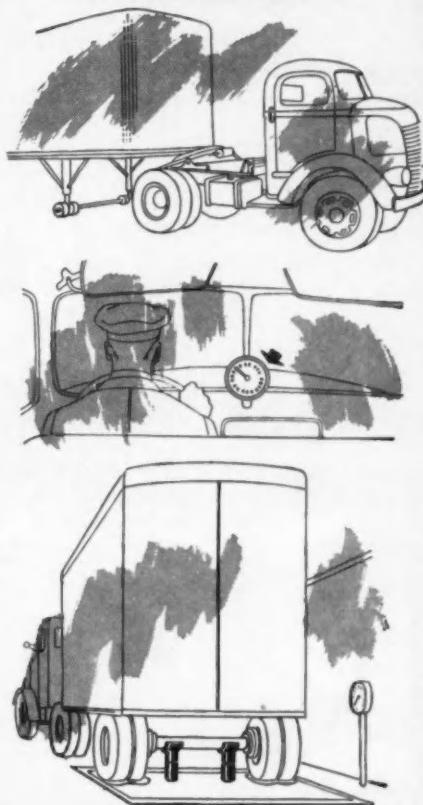
PERMANENT INSTALLATION

Utilizing this same principle, a pair of hydraulic cylinders can be built into a concrete base, so designed that, either trailer or tractor axles can be individually weighed by reading a nearby gauge.



*Is also a real asset
when changing
rear tires.*

CERTIFIED WEIGHT BY
CEMCO Jockey Weigh



TRAILER JOCKEYS and WEIGH GAUGE

FOR HAULING DISABLED TRACTORS

New application of Cemco Trailer Jockey has won friends and influenced budgets . . .

THE **FIFTH WHEEL CRANE**



This crane, mounted on any standard fifth wheel, offers tremendous savings when you need to:

- haul disabled tractors
- "dead-head" tractors
- raise dropped trailers
- move heavy equipment around the shop

Takes only 15 minutes to mount crane on your fifth wheel. Has ample lifting capacity. Needs only one man to go after a disabled tractor. In most cases it takes the place of a costly wrecker, yet the investment is surprisingly low.

CEMCO INDUSTRIES, Inc.

GALION, OHIO

Makers of CEMCO: Trailer Jockeys, Hydraul-lift Tailgates, Mobile Machine & Lubricating Shops, Hydraulic Dock Ramps, Split-Shaft Power Take-offs, Bulk Cement Haulers.

January News Roundup

Continued from Page 164

been set but fleets are reminded that plans are to launch the inspection program on May 1.

Ohio: Weight limits on the Ohio Turnpike will range up to 90,000 lb GVW for the largest combination permitted with a 21,000 lb axle weight limit. Maximum speed will be 55 mph.

1954 Domestic Truck Factory Sales by G.V.W.*

	5,000 lb. and less	5,001- 10,000	10,001- 14,000	14,001- 16,000	16,001- 19,500	19,501- 26,000	Over 26,000	Total
January.....	41,010	15,131	3,323	14,128	2,880	4,006	3,067	88,563
February.....	34,000	13,685	2,817	11,805	2,716	4,613	2,932	72,486
March.....	39,232	18,433	3,343	14,774	3,143	4,638	3,591	86,184
April.....	35,845	15,236	3,288	14,390	2,833	5,545	3,302	79,438
May.....	33,863	14,296	2,808	12,845	2,742	3,973	3,163	73,712
June.....	35,744	13,263	2,882	13,278	2,892	3,345	2,524	74,250
July.....	31,063	10,844	2,675	10,868	2,061	1,985	2,085	62,161
August.....	29,913	10,265	2,209	10,129	2,810	1,887	3,050	60,263
September.....	24,216	9,707	2,087	7,750	2,033	2,098	2,953	50,945
October.....	23,509	8,769	1,764	7,476	2,588	1,030	2,650	48,793
Total—10 Mos. 1954.....	326,395	127,551	27,166	117,441	26,696	32,623	30,578	800,048
Total—10 Mos. 1953.....	442,198	170,656	34,358	125,877	36,011	70,364	39,122	918,588

*Automobile Manufacturers Association.

New AASHO Manager

Alfred E. Johnson has become Ex-

ecutive Secretary of the American Assn. of State Highway Officials. Hal. H. Hale, who was secretary, joins the Association of American Railroads.

TAA Vice President

Hal Hammond, formerly with the U. S. Chamber of Commerce, has been named as executive vice president of the Transportation Assn. of America.

ATA Field Services

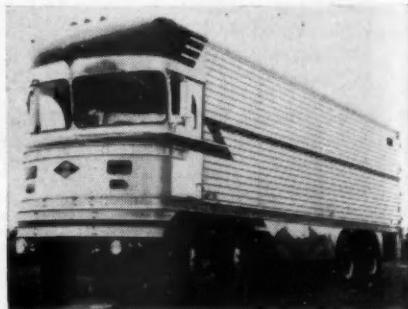
Edward D. Hicks has been appointed acting director, Field Service Dept., American Trucking Assns. He succeeds the late Harry B. Bridgman, who died first of last month.

Congressional Chiefs

Expected to head the Public Works Committee in reorganization of the House of Representatives is Rep. Charles A. Buckley of New York. This committee will probably have first crack at highway legislation. Senate Public Works Committee is expected to be headed by Senator Dennis Chavez, New Mexico. House

(TURN TO PAGE 178, PLEASE)

4-Axle Van, 59,000 lb GVW



Here is the four-axle version of the three-axle van truck announced by McBright, Inc., Lehighton, Pa. (See CCJ for Oct. '53, page 75). This model loads 23,000 lb on front axles, 36,000 lb on the rear axles for a total GVW of 59,000 lb. It is equipped with Bendix-Westinghouse power steering. Other components are the same as in the three-axle unit, including the 145-hp White Mustang engine.

BOS Hydraulic TRUCK TIRE DEMOUNTER

Now, the new super model offers a quick and easy way to remove stuck or frozen casings and lock rings. The BOS hydraulic truck tire remover handles all sizes of truck tires — 15" to 24". Portable — used in shop or field • Avoids injury to operator, rim and tire. Precision built, compact and easy to handle • Features Hein-Werner hydraulic unit.

A. Attach BOS demountor.

B. Raise demountor vertically and pump.

C. Generally four applications will free rim.

THE THREE STAR SAFETY FLATER

The Three Star Safety Flater is an amazingly simple device for positively protecting the operator, (when inflating truck tire) against the danger of blown lock rings. It is exceptionally easy to operate and may be adjusted to handle different sizes of wheels and rims.

The Three Star Safety Flater will protect your men and enable you to meet insurance underwriters specifications for safety.

The Three Star Safety Flater can be used anywhere in the shop as it is light and portable or it can be carried in a service truck for road calls.

MAIL ORDERS OR REQUESTS

FOR FURTHER DETAILS TO

JACK P. HENNESSY SALES CO.

12 Depot Square

Englewood, N.J.

GREAT NAMES GREAT SKILLS GREAT TRAILERS

**WESTINGHOUSE
or WAGNER
AIR BRAKES**

**REYNOLDS
ALUMINUM
SKIN & EXTRUDED
POSTS**

**FIBERGLASS
or STYROFOAM
INSULATION**

**KAISER
ALUMINUM
EXTRUSIONS &
SHEETS**

**NASH
BUMPERS
and
TIRE
CARRIERS**

**WEBB
WHEELS**

**GOODYEAR
& FIRESTONE
RIMS**

**STANDARD
FORGE
AXLES**

**ANDREWS-REYCO
or HUTCHENS
TANDEMS**

HOMAN
LANDING GEAR

**U.S. STEEL
OR
RYERSON
UPPER FIFTH
WHEEL PLATES**

Andrews trailers offer you an unbeatable combination of great products. Added to them are the skills of Andrews designers, engineers, production supervisors and mechanics.

Andrews top quality *All-Aluminum* model, pictured here, and the popular priced *Payloader* are excellent performers, low in original cost, low in weight, and proved lowest in maintenance.

We would like to quote you prices on any quantity from one to a hundred, made to meet your specific requirements. Write or telephone at our expense.

ANDREWS

Industries Inc.



SKILLFUL application of double-locking, easily replaceable, extruded rubber door seals, gives the world's finest, lightest, weathertight doors. 45 Distributors, nationwide, supply parts and service.

Safeguard fleet vehicles . . . in roadside emergencies



INTERNATIONAL FUSEES

Dependable, all-weather Kilgore Fusees warn of disabled cars and trucks, prevent accidents, injuries, liabilities. Put a Kilgore safety-pack in every fleet vehicle. 3 high-candle-power red fusees in box. Each burns 15 minutes, bright enough to change a tire. Meet insurance, state, police regulations. ICC, UL, Bureau of Explosives, RR-approved. Not subject to spontaneous combustion.



KILGORE, INC.

INTERNATIONAL FLARE SIGNAL DIVISION
WESTERVILLE 1, OHIO

January News Roundup

Continued from Page 170

Interstate Commerce Committee's new chairman will be Rep. J. P. Priest, Tennessee, and, in the Senate, the Interstate Commerce Committee will be led by Senator Warren G. Magnuson, Washington.

Used Trailers

Trailmobile is giving used trailers a "Safe-T-Chek" before putting them on the market. It includes a reconditioning of brakes, bearings, lights, springs and props, as well as a 50-day, 50-50 warranty.

State Highway Ads

Watch for an ad featuring your state's highways. Caterpillar Tractor Co., Peoria, Ill., has a new series in the works that tells how, state-by-state, adequate highways save. The ad series started in the Saturday Evening Post, Jan. 1 issue, featuring California.

International Engine

International Harvester Co., Chicago, is producing a 140-hp, 6-cyl, valve-in-head gasoline engine, the Black Diamond 264. It is optional equipment for the five International R-160 series trucks. Designed for 14,000 to 17,000 lb GVW and up to (TURN TO PAGE 182, PLEASE)

Lasco
MOUNTAIN MASTER
BRAKE LINING
America's Finest!

From Hollywood to Manhattan — Demanded by Fine Car, Bus and Heavy Transportation Owners. Get the BEST for a Few Cents More. Cut Costs — Prevent Accidents — Save Lives! Dealer inquiries are invited. Write or wire.
→ A LAHER INDUSTRIES PRODUCT ←
LASCO BRAKE PRODUCTS CORP. MEMPHIS 3, TENN.
OAKLAND 7, CALIF.

BOWERS BATTERIES

Always Better

BOWERS BATTERY & SPARK PLUG CO., READING, PA.

"**THIS LUBRICANT CUT OVERHAULS IN HALF**"
—says WESTERN AUTO TRANSPORTS, INC.

"Operating over 200 tractors and 200 trailers from Detroit to the West Coast, we encounter temperatures from 120° above across the desert to 40° below in the mountains of Colorado. We have found that with LUBRIPLATE our wheel bearing packing mileage has tripled. Since using Lubriplate A.P.G.-90 in our transmissions and differentials, we are getting double the mileage between their overhauls."

REGARDLESS OF THE SIZE AND TYPE OF YOUR MACHINERY, LUBRIPLATE GREASE AND FLUID TYPE LUBRICANTS WILL IMPROVE ITS OPERATION AND REDUCE MAINTENANCE COSTS.

LUBRIPLATE is available in grease and fluid densities for every purpose... LUBRIPLATE H. D. S. MOTOR OIL meets today's exacting requirements for gasoline and diesel engines.



For nearest LUBRIPLATE distributor see Classified Telephone Directory. Send for free "LUBRIPLATE DATA BOOK" . . . a valuable treatise on lubrication. Write LUBRIPLATE DIVISION, Fiske Brothers Refining Co., Newark 5, N. J. or Toledo 5, Ohio.



drivers in this spot

SAFE BRAKES SAVE LIVES

for safer brakes... reline with

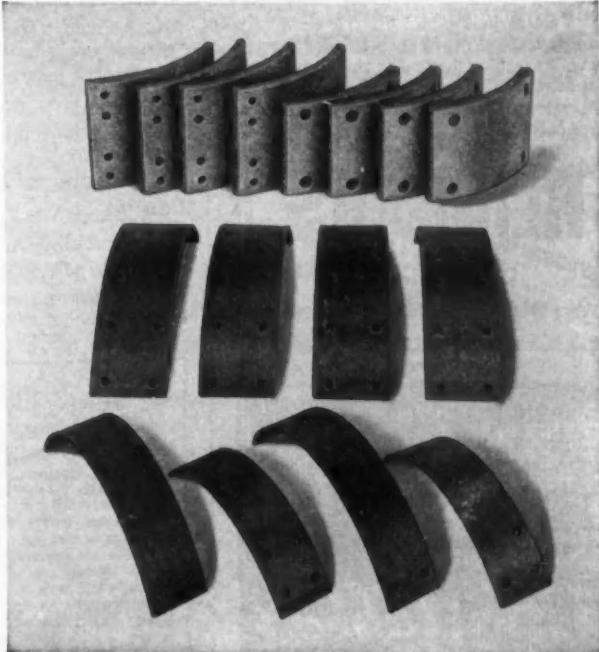
WAGNER®

BRAKE LINING

Wagner Brake Lining is made of the finest ingredients obtainable. It is uniform in frictional qualities throughout its entire service thickness... contains no harmful abrasive materials to damage drums. It easily withstands excessively high operating temperatures... will never compress, absorb moisture, or deteriorate with age. It wears slowly and evenly... assures more miles between relines.

In the laboratory, at the proving grounds, and by service in Wagner-owned vehicles, the performance of Wagner Brake Lining is rigidly checked. Exacting standards must be met before the lining is approved for distribution.

Wagner Brake Lining is available in sets, blocks, rolls, slabs, cut segments and on shoes either bonded or riveted. There are more than 100 width and thickness combinations in internal rolls, external rolls, and block segments... over 400 individual sets... and over 350 block sizes. Coverage is complete for all vehicles.



Wagner Electric Corporation
6470 PLYMOUTH AVE., ST. LOUIS 14, MO., U.S.A.
(Branches in principal cities in U.S. and in Canada)

Please send me a free copy of Hydraulic Brake Service
Guide HU-411. I understand that there is no obligation.

NAME _____
FIRM NAME _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____



TRANSFORMERS... INDUSTRIAL BRAKES

director of pu
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ICC Identifi

New ICC re
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Truck Wheel Changes — a one-man job with **KEN-TOOL** IMPACT WRENCH SETS

Ken-Tool Impact Wrench Handles swing freely through a 120° arc . . . strike with tremendous force. Loosen rusted, frozen nuts fast. Long shaft keeps handle clear of truck or bus bodies.



SEE YOUR JOBBER on the complete line of Job-Designed Ken-Tools. Forged by the largest exclusive manufacturer of top-quality Tire-changing Tools and Equipment. THE KEN-TOOL MFG. CO., AKRON 5, OHIO.



WOHLERT PARTS have been installed universally for over 30 years by Independent Repairmen, Fleet Owners and Car Dealers. They have been COMPARED & COPIED.

Hohlert
LANSING, MICHIGAN

KINNEAR STEEL ROLLING DOORS

For Truck Bodies
and Buildings

Kinnear Rolling
Doors save floor
and wall space,
open completely
out of the way,
and give extra
protection. Built
any size; motor or
manual control.
Write for details.

THE KINNEAR MFG. COMPANY
2100-20 Fields Ave. • Columbus 16, Ohio



January News Roundup

Continued from Page 178

29,000 lb GCW, the 264 cu in. engine has a 3 11/16-in. bore and a 4 1/8-in. stroke.

Dynamometer Leasing

Clayton Mfg. Co., El Monte, Cal., has announced a program of leasing dynamometers on a five-year basis. Called the "Lease-Rent" plan, it is available to shops in all 48 states, makes it possible to benefit from dynamometer testing for a nominal monthly cost.

Divco Expands Sales

Divco Corp., Detroit, has appointed the Allman Co., Detroit, as its advertising and marketing counselor. Divco plans an expanded sales program for its multi-stop delivery trucks.

Man of the Year

William W. Ward, president of Ward Trucking Corp., Altoona, Pa., was named "Man of the Year" by the Altoona Optimist Club. Ward's work as chairman of a group to raise \$1 million for industrial development in the area was cited.

MTA General Manager

William W. Johnson is new Michigan Trucking Assn. general manager. For the past 2 1/2 years, he has been

(TURN TO PAGE 185, PLEASE)

SALES REPRESENTATIVE WANTED

Nationally known manufacturer now preparing to market battery-powered 1 ton and 1 1/2 ton street truck for retail, door to door delivery of milk, baked goods, parcel, laundry and dry cleaning, etc. Salesmen needed with successful selling experience and wide acquaintance with fleet managers in areas east of Mississippi. Preference given man between 35 and 45 years old, willing to travel and to make headquarters in New Jersey. Give complete history and resume of experience in first letter. All replies confidential. Our own sales organization knows of this requirement.

BOX 24, COMMERCIAL CAR JOURNAL
Chestnut and 56th Sts., Philadelphia 39, Pa.

SALES ENGINEER WANTED

Nationally known manufacturer now preparing to market battery-powered 1 ton and 1 1/2 ton street truck for retail, door to door delivery of milk, baked goods, parcel, laundry and dry cleaning, etc. Requires services of sales engineer liaison between production and sales with thorough engineering knowledge of similar type gasoline powered trucks and experience in making sales quotations and customer contacts. Preference given man between 35 and 45 years old, willing to travel from time to time and to locate in New Jersey. Give complete history and resume of experience in first letter. All replies confidential. Our own organization knows of this requirement.

BOX 23, COMMERCIAL CAR JOURNAL
Chestnut and 56th Sts., Philadelphia 39, Pa.

FRINK SNO-PLOWS

Both "V" TYPE and
ONE WAY BLADE TYPE
hand or power hydraulic control
FOR ALL MOTOR TRUCKS
FROM 1/2 to 10 TONS

FRINK SNO-PLOWS, INC., CLAYTON, 1000 ISL., N.Y.
DAVENPORT-BESLER CORP., DAVENPORT, IOWA
FRINK SNO-PLOWS OF CAN. LTD., TORONTO, ONT.

"Cleveland" FORGED Quality Body Hardware

"Cleveland" Forged Quality Body Hardware includes fittings, hardware, locks, hinges and other accessories for modern buses, trailers, trucks, and all types of vehicles.

Send for New Catalog No. 24
Serving the industry since 1881

The Cleveland Hardware
and Forging Company
3264 East 79th Street
Cleveland 4, Ohio, U.S.A.

WOLF'S HEAD HEAVY DUTY MOTOR OIL 100% PURE PENNSYLVANIA

Exceeds
EVERY REQUIREMENT
FOR HEAVY DUTY OIL

HEAVY DUTY MOTOR TRUCKS GASOLINE ELECTRIC GENERATING SETS

DUPLEX

TRUCK COMPANY
LANSING, MICHIGAN

For better traction Use CLAW Double-Duty TRUCK CHAINS

Columbus McKinnon Chain
Corporation
TONAWANDA, N. Y.

January News Roundup

Continued from Page 182

director of public relations and administrative affairs for the association.

ICC Identification

New ICC requirements for identification became effective Jan. 3. Published last month, the new identification regulations include a requirement that each power unit display on each side, in connection with the fleet name, the certificate, permit or docket number of the authority under which the truck is operating. The numbers are to be preceded by the letters "ICC." Sub numbers will not be shown. Use of the black and white ICC plates is prohibited.

Highway Utility Co.

Judge John E. Mulroney, of Iowa's Supreme Court, has suggested that highways be privately built, maintained and operated by public service companies regulated as public utilities in a manner similar to that of electric, gas and power companies.

Keeshin Changes Name

General Expressways will soon be the new name for the three operating companies comprising the Keeshin System, operating in 17 states and the District of Columbia. Seaboard Freight Lines, Inc., the eastern operating company, will be known as Seaboard General Expressways, Inc.

Excise Tax Revenue

As of the end of the fiscal year, June 30, 1954, the government collected \$149,914,000 in federal taxes on truck chassis and bodies. Tax in the year before was \$210,032,000. Lubricating oils brought revenue totaling \$68,441,000. The figure in 1953 was \$73,321,000. Collections on gasoline brought \$835,609,000 in revenue, compared with \$890,675,000 in the preceding year. Tires netted the government \$129,567,000. In 1953, the total was \$154,922,000. Tubes brought a total of \$22,512,000 as against \$25,125,000 in the preceding year. The tax on parts and accessories for automotive vehicles netted revenue totaling \$135,245,000. In the preceding year this figure was \$177,924,000. Tax collections for diesel fuel showed an increase, the figure for 1954 being \$19,056,000 as against \$15,091,000 in 1953. Tax paid for the transportation of property totaled \$396,591,000, compared with \$419,604,000 in 1953.

1954 Truck Trailer Shipments

	October	Ton Months
Vans:		
Insulated and refrigerated:		
Steel.....	80	657
Aluminum.....	297	2,807
Furniture:		
Steel.....	54	960
Aluminum.....		
All other closed-top vans:		
Steel.....	808	5,149
Aluminum.....	1,353	8,750
Open-top:		
Steel.....	78	830
Aluminum.....	136	854
Total—Vans.....	2,806	20,016
Tanks:		
Petroleum:		
Petroleum.....	435	4,438
All other.....	34	586
Total—Tanks.....	469	5,024
Pole, Pipe and Logging:		
Single Axle.....	50	502
Tandem Axle.....	89	864
Total.....	139	1,166
Platforms:		
Racks, livestock and stake.....	101	694
Grain bodies.....	106	631
Platforms (flat), all types.....	504	4,362
Total—Platform.....	713	5,687
Low-bed heavy haulers.....	177	2,797
Dump trailers.....	89	823
All other trailers.....	268	7,414
Total—Complete Trailers.....	4,461	42,927
Chassis only.....	165	1,982
Total—Trailers and Chassis.....	4,626	44,909

Safety Tax Saving

State and local highway safety programs are getting an indirect boost from the Internal Revenue Service. Many public safety campaigns are paid for in part by individual and corporation contributions. Funds thus derived are used in paying for such costs as stationery, printing, billboard rental, and advertising company services. Private taxpayers and corporations contributing money to a public safety program are eligible for tax breaks, says IRS. Deductions equal to the amount contributed can be made in reporting income to federal tax collectors.

Safety Awards

Fleets awarding their outstanding, safe drivers recently include:

Akers Motor Lines, Inc., Gastonia, N. C.—to 199 drivers. Each driver has over one year of accident free truck driving. Average for all drivers is 4½ years each without an accident.

Keal Driveaway Co., Cleveland, Ohio—to 59 drivers. Total record for the group is 183 safe years. Wives of drivers with records of five years or more were presented with gold bracelets.

St. Paul Terminal Warehouse Co., St. Paul, Minn.—to 48 drivers. Three of the drivers received awards for 14 consecutive years of safe truck driving.

it's what's **inside**
that counts



THE EFFICIENCY OF
Luber-finer
PATENTED PROCESS
PACK
**HAS NEVER
BEEN EQUALLED**

STANDARD of the INDUSTRY
SINCE 1936

DON'T BE MISLED BY PRICE ALONE!

There is no substitute for DIESELPAK's Patented Filtering Process for H.D. Compounded oils AT ANY PRICE. The DIESELPAK cleans more oil faster—keeps it CLEAN longer—and gives more service and better engineered protection than any other filtering element. It PAYS to get the BEST!

✓ Protects engine

The DIESELPAK is designed to remove not only ABRASIVES but also CONTAMINANTS such as moisture, carbon, acid, etc., from oil, and is engineered to keep the filtering media and the removed contaminants from migrating back into engine.

✓ Extends periods between drains

The DIESELPAK collects and holds even the most finely dispersed contaminants without affecting or removing compound additives from the oil. A glance at the dip stick will show that the oil is CLEANER—symbol of better lubrication and longer oil life enjoyed only by Luber-finer users.

✓ Takes less oil

The DIESELPAK because of its engineered construction requires 2 to 4 quarts less oil than spongy substitute filter elements being offered for use in the Luber-finer housing. This is an additional saving enjoyed when using the DIESELPAK.

LUBER-FINER PACKS AVAILABLE:

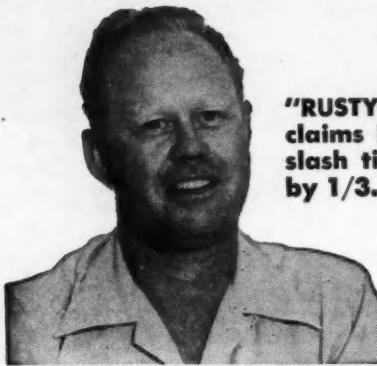
1. REFINING PACK—Introduced to the public in 1935 for use with straight mineral oils, fuel oils, hydraulic oils, and inhibited industrial oils.

2. DIESELPAK—First made available in 1941, the DIESELPAK was primarily designed for use with H. D. detergent compounded oils and has also achieved outstanding results when used with fuel oils and straight mineral oils.

Write for complete information to Dept. 15

LUBER-FINER, Inc.
2514 S. Grand Ave., Los Angeles 7

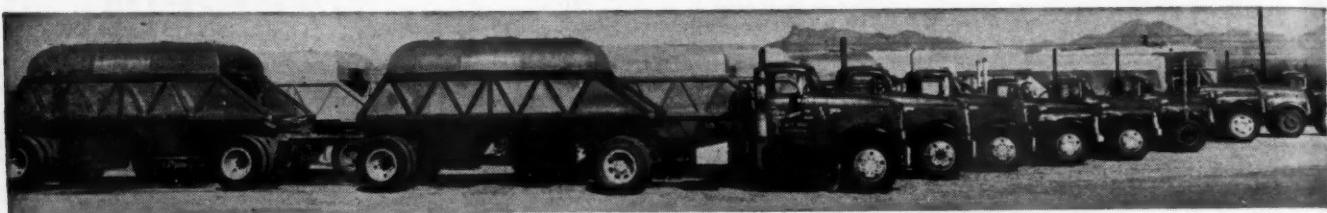
Dayton Thorobreds Cut Operating Costs!



"RUSTY" GIBBONS
claims Dayton
slash tire costs
by 1/3.

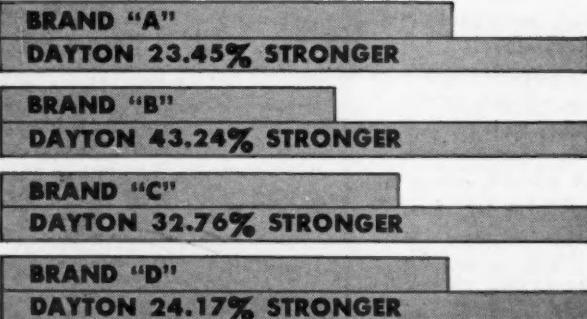
G. L. "Rusty" Gibbons, owner of Arizona Cement Transportation Company in Rillito, operates his fleet in the hottest climate of the United States . . . and was averaging four blowouts per week until he switched to Dayton Thorobreds — *the tire with the 30% greater carcass strength! He has not blown a Dayton Tire yet!*

Says Mr. Gibbons, "The performance of Dayton Thorobred Truck Tires is *vastly* superior to that of any other tire I've ever used. After all, Dayton cut costs for me by 33-1/3%."



Dayton Thorobreds 30% STRONGER

The calculated carcass strength of a 10.00x20 12 ply rated 2200 denier all rayon Dayton Truck Tire is 30.4% greater than the average of the four other leading brands of truck tires. Another big reason why Dayton can help you prevent blowouts, cut tire costs, and get more recaps per tire. Call your Dayton Dealer today.



The Dayton Thorobred Highway Extra Mileage Rib with 100% 2200 denier Hi-Tensile Rayon Cord



Dayton Rubber

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